

636417

REPORT NUMBER: 201U-VER-03-01

**SAFETY COMPLIANCE TESTING FOR FMVSS 201
OCCUPANT PROTECTION IN INTERIOR IMPACT
UPPER INTERIOR HEAD IMPACT PROTECTION**

**TOYOTA MOTOR MANUFACTURING CANADA INC.
2003 TOYOTA COROLLA 4-DOOR SEDAN**

NHTSA NUMBER: C35101

VERIDIAN TEST NUMBER: 8653-FMH-06

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225



Date: Nov. 21, 2002

FINAL REPORT

PREPARED FOR:

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
Mail Code: NSA-31, Room 6111
400 Seventh Street, SW
Washington, DC 20590

This publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared by:

James A. Czarniecki
James Czarniecki, Project Engineer

Approved by:

David J. Travala
David J. Travala, Program Manager
Transportation Science Center

Approval Date:

January 3, 2003

FINAL REPORT ACCEPTANCE BY OVSC:

John Rosen
Accepted By

1.15. 2003

Date of Report Acceptance

TECHNICAL REPORT STANDARD TITLE PAGE

1. <i>Report No.</i> 201U-CAL-03-01	2. <i>Government Accession No.</i>	3. <i>Recipient's Catalog No.</i>	
4. <i>Title and Subtitle</i> Final Report of FMVSS 201 Compliance Testing of a 2003 Toyota Corolla 4-door Sedan NHTSA No. C35101		5. <i>Report Date</i> Nov. 21, 2002	
		6. <i>Performing Organization Code</i> VER	
7. <i>Author(s)</i> Jim Czamecki, Project Engineer David J. Travale, Program Manager		8. <i>Performing Organization Report No.</i> 8653-FMH-06	
9. <i>Performing Organization Name and Address</i> Veridian Engineering 4455 Genesee Street Buffalo, New York 14225		10. <i>Work Unit No.</i>	
		11. <i>Contract or Grant No.</i> DTNH22-99-C-01005	
12. <i>Sponsoring Agency Name and Address</i> U.S. Department of Transportation National Highway Traffic Safety Administration Safety Assurance Office of Vehicle Safety Compliance Mail Code: NVS-220 400 Seventh St., SW, Room 6111 Washington, D.C. 20590		13. <i>Type of Report and Period Covered</i> Final Report November 2002	
		14. <i>Sponsoring Agency Code</i> NVS-220	
15. <i>Supplementary Notes</i>			
16. <i>Abstract</i> Compliance tests were conducted on the subject vehicle, a 2003 Toyota Corolla 4-door Sedan in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure TP-201U-01 for determination of FMVSS 201 compliance. Test failures identified were as follows: None			
17. <i>Key Words</i> Compliance Testing Safety Engineering FMVSS 201U		18. <i>Distribution Statement</i> <u>Copies of this report are available from:</u> NHTSA Technical Information Services (ITS) Mail Code: NPO-230 400 Seventh St., SW, Room 5108 Washington, DC 20590 Telephone No.: 202-366-4946	
19. <i>Security Classif. (of this report)</i> UNCLASSIFIED	20. <i>Security Classif. (of this page)</i> UNCLASSIFIED	21. <i>No. of Pages</i>	22. <i>Price</i>

Form DOT F1700.7 (8-69)

TABLE OF CONTENTS

<u>Section</u>		<u>Page No.</u>
1	PURPOSE AND TEST PROCEDURE	1-1
2	SUMMARY OF UPPER INTERIOR HEAD IMPACTS	2-1
3	SUMMARY OF TEST RESULTS AND DATA PLOTS	3-1
APPENDIX A	PHOTOGRAPHS	A-1
APPENDIX B	PART 572L PERFORMANCE CALIBRATION IN SUPPORT OF VEHICLE SAFETY COMPLIANCE TESTING FOR OCCUPANT PROTECTION IN INTERIOR IMPACT	B-1

LIST OF DATA SHEETS

<u>DATA SHEET</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
2-1	SUMMARY OF UPPER INTERIOR HEAD IMPACT TESTS	2-2
2-2	TEST RESULTS SUMMARY TABLE	2-3
2-3	GENERAL TEST AND VEHICLE PARAMETER DATA	2-5
2-4	TARGET MEASUREMENT REFERENCE SHEET	2-7
2-5	APPROACH ANGLE LIMITS	2-9
2-6	POST-TEST VISUAL INSPECTION	2-10
2-7	TARGET IMPACT LOCATION ON FMH SUMMARY	2-11

SECTION 1

PURPOSE AND TEST PROCEDURE

This head impact compliance test is part of the FMVSS 201 Upper Interior Head Impact Protection Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-99-C-01005. The purpose of this head impact compliance test was to determine whether the subject vehicle, 2003 Toyota Corolla 4-door Sedan, NHTSA No. C35101, meets the performance requirements of FMVSS 201, Occupant Protection in Interior Impact. The compliance test was conducted using the requirements found in the OVSC Laboratory Test Procedure No. TP-201U-01 dated April 3, 1998.

SECTION 2

SUMMARY OF UPPER INTERIOR HEAD IMPACTS

A 2003 Toyota Corolla 4-door Sedan, NHTSA No. C35101, was impacted at various locations throughout its upper interior by a 4.54 kg 50th percentile headform. A total of ten (10) impacts were performed in this test series. The target area impacts were chosen by the NHTSA Contracting Officers Technical Representative (COTR). A summary of test results can be found on data sheet 2-1. The ten (10) areas chosen for testing were:

AP1	BP1	SR1	URBP	RP1
AP3	BP2	SR2A		RP2
	BP3			

The selected impact areas on the test vehicle appeared to comply with the performance requirements of FMVSS 201.

Three Free Motion Headforms (FMH) were used in this test series. All three FMH's were calibrated prior to and after the test series. Calibration information are included in Appendix B. Each FMH weighed 4.54 ± 0.5 kg. and had an orthogonal tri-axis accelerometer pack mounted at the center of gravity (c.g.).

A total of three (3) channels of data for each target impact test was recorded on a Keyser Threde data acquisition system. Data plots along with still photographs can be found in Section 3 of this report.

To document each target area impact test, one Kodak Ektapro high speed video camera was used to record the headform contact with each selected target area.

DATA SHEET 2-1

SUMMARY OF UPPER INTERIOR HEAD IMPACT TESTS

Year/Make/Model/Body Style:	2003 Toyota Corolla 4-door Sedan
Vehicle Body Color:	White
Vehicle NHTSA No.:	C35101
VIN:	2T1BR32EX3C078949
Month & Year of Manufacture:	Sept. 02

Test No.	Code	Target			Approach Angles (degrees)		Velocity (kph)	FMV HIC	HIC(d)*
		X (mm)	Y (mm)	Z (mm)	Horizontal	Vertical			
1	AP1	1834	577	1935	155	50	23.57	513.7	553.9
2	AP1	2106	492	2101	124	16	23.60	671.1	673.5
3	RP1	3329	484	2111	60	16	23.52	475.8	525.4
4	BP3	2480	597	1927	88	-8	23.67	437.4	496.4
5	SR2A	2335	461	2120	90	10	23.58	275.2	374.1
6	BP1	2550	475	2155	90	12	23.56	588.8	610.6
7	RP2	3342	-607	1968	296	17	23.51	505.6	547.9
8	BP2	2523	-567	1924	270	4	23.45	515.0	555.0
9	URBP	3201	-386	2172	270	46	23.70	755.6	736.4
10	SR1	2210	-484	2138	270	22	23.54	511.0	551.9

Note : Origin of coordinate system is the front center of the vehicle bumper using Toyota's reference coordinate's (door striker upper hole : x=2439.3mm , y=752.6mm , z=1563.2mm).

*HIC(d)=0.75446(Free Motion Headform HIC)+166.4

DATA SHEET 2-2

TEST RESULTS SUMMARY TABLE

Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR32EX3CU8949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

Target (mm)				Horizontal Impact angle	Vertical Impact Angle	Velocity (KPH)	FMII-IIIIC	IIIIC(d)
	X	Y	Z					
A-PILLAR DRIVER SIDE								
AP1	2063	-497	2113	R-2		-	-	-
Rel. AP1	2099	-493	2110	-	-	-	-	-
AP2	2031	-542	2026	-	-	-	-	-
AP3	1836	-587	1942	-	-	-	-	-
A-PILLAR PASSENGER SIDE								
AP1	2066	492	2110	R-2		-	-	-
Rel. AP1	2106	492	2101	124	16	23.60	671.1	673.5
AP2	2020	543	2017	-	-	-	-	-
AP3	1834	577	1935	155	50	23.57	513.7	553.9
B PILLAR DRIVER SIDE								
BP1	2551	-477	2163	-	-	-	-	-
BP2	2523	-567	1924	270	4	23.45	515.0	555.0
BP3	2486	-590	1948	R-1		-	-	-
Rel. BP3	2477	-598	1932	-	-	-	-	-
BP4	2575	-636	1844	-	-	-	-	-
B-PILLAR / DOOR FRAME PASSENGER SIDE								
BP1	2550	475	2155	90	12	23.56	588.8	610.6
BP2	2518	567	1915	-	-	-	-	-
BP3	2486	589	1942	R=1		-	-	-
Rel. BP3	2480	597	1927	88	-8	23.67	437.4	496.4
BP4	2575	636	1835	-	-	-	-	-
OTHER PILLARS DRIVER SIDE								
OP1	-	-	-	-	-	-	-	-
OP2	-	-	-	-	-	-	-	-
OTHER PILLARS PASSENGER SIDE								
OP1	-	-	-	-	-	-	-	-
OP2	-	-	-	-	-	-	-	-

Note: R=1 - Relocated once (one sphere) R=2 - Relocated twice (two spheres)

Target (mm)				Horizontal Impact angle	Vertical Impact Angle	Velocity (KPH)	FMH-HIC	HIC(d)
	X	Y	Z					
FRONT HEADER DRIVER SIDE								
FH1	1997	-373	2123	-	-	-	-	-
FH2	2004	-225	2132	-	-	-	-	-
FRONT HEADER PASSENGER SIDE								
FH1	1997	377	2116	-	-	-	-	-
FH2	2001	229	2124	-	-	-	-	-
SIDE RAIL DRIVER SIDE								
SR1	2210	-484	2138	270	22	23.54	511.0	531.9
SR2A	2362	-485	2146	-	-	-	-	-
SR2B	2252	-480	2145	-	-	-	-	-
SR3	2955	-475	2128	-	-	-	-	-
SIDE RAIL PASSENGER SIDE								
SR1	2219	491	2148	R=2		-	-	-
Rel. SR1	2216	466	2112	-	-	-	-	-
SR2A	2168	501	2155	R=2		-	-	-
Rel. SR2A	2335	461	2120	90	10	23.58	275.2	374.1
SR2B	2249	489	2151	R=2		-	-	-
Rel. SR2B	2248	458	2111	-	-	-	-	-
SR3	3068	481	2114	-	-	-	-	-
UPPER ROOF DRIVER SIDE								
URBP	3201	-386	2172	270	46	23.70	755.6	736.4
UPPER ROOF PASSENGER SIDE								
URBP	3197	387	2160	-	-	-	-	-
REAR PILLAR DRIVER SIDE								
RP1	3334	-484.7	2121	-	-	-	-	-
RP2	3341.9	-606.6	1968.1	296	17	23.51	505.6	547.9
REAR PILLAR PASSENGER SIDE								
RP1	3329.4	484.4	2111.3	60	16	23.52	475.8	525.4
RP2	3343.1	606.9	1958.9	-	-	-	-	-

Note: R=1 - Relocated once (one sphere) R=2 - Relocated twice (two spheres)

DATA SHEET 2-3

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR32EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02
 Engine Data: 4 Cylinders; - CID; 1.8 Liters; - cc
 Engine Placement: x Longitudinal; or - Lateral
 Transmission: 5 Speed; x Manual; - Automatic; - Overdrive
 Final Drive: - Rear Wheel Drive; x Front Wheel Drive; - Four Wheel
 Odometer Reading 138 km
 Options: x A/C; x Power Steering; x Pwr.Brakes; x Pwr. Windows
 Interior Trim Information :

The front passenger side rail and the rear outboard seating positions had grab handles.
 Both B-pillars had adjustable seat belt anchorages.

DATA FROM TIRE PLACARD

Tire Pressure (at capacity): 210 kPa FRONT
210 kPa REAR
 Recommended Tire Size: P185/65R15
 Tires on Test Vehicle: P185/65R15 ; Manufacturer: Goodyear
 Vehicle Capacity Data:
 Number of Occupants: 2 Front; 3 Rear; - 3rd Seat; 5 Total
 Type of Front Seats: x Bucket; - Bench; - Split Bench
 Type of Front Seat Back: - Fixed; x Adjustable with x lever or - Knob
 Vehicle Capacity Weight (VCW) = 390 kg (A)
 No. of Occupants x 68 kg. = 340 kg (B)
 Rated Cargo/Luggage Weight (RCLW) = 50 kg (A-B) Max. RCLW = 136 kg.

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front =	<u>343</u> kg	Left Rear =	<u>230</u> kg
Right Front =	<u>344</u> kg	Right Rear =	<u>220</u> kg
TOTAL FRONT =	<u>687.0</u> kg	TOTAL REAR =	<u>450.0</u> kg
% of Total Weight =	<u>60.4</u> %	% of Total Weight =	<u>39.6</u> %
TOTAL WEIGHT =	<u>1137.0</u> kg		

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight	=	<u>1137.0</u>	kg
+ Rated Cargo/Luggage Weight	=	<u>50.0</u>	kg
TEST VEHICLE TARGET WEIGHT:	=	<u>1187.0</u>	kg

WEIGHT OF TEST VEHICLE (FULLY LOADED):

Left Front	=	<u>337</u>	kg	Left Rear	=	<u>253</u>	kg
Right Front	=	<u>341</u>	kg	Right Rear	=	<u>250</u>	kg
TOTAL FRONT	=	<u>678.0</u>	kg	TOTAL REAR	=	<u>503.0</u>	kg
% of Total Weight	=	<u>57.4</u>	%	% of Total Weight	=	<u>42.6</u>	%
TOTAL TEST WEIGHT	=	<u>1181.0</u>	kg				

Weight of vehicle secured in test vehicle's cargo area = 50 kg.

TEST VEHICLE ATTITUDE (all dimensions in millimeters):**AS DELIVERED:**

Left Front	<u>711</u>	Right Front	<u>712</u>	Left Rear	<u>714</u>	Right Rear	<u>718</u>
------------	------------	-------------	------------	-----------	------------	------------	------------

FULLY LOADED:

Left Front	<u>710</u>	Right Front	<u>709</u>	Left Rear	<u>701</u>	Right Rear	<u>703</u>
------------	------------	-------------	------------	-----------	------------	------------	------------

Test Vehicle Wheelbase: _____ millimeters

TEST VEHICLE PITCH AND ROLL ANGLES:**AS DELIVERED:****PITCH ANGLES**

Left Door Sill	<u>0.2 °</u>	Right Door Sill	<u>0.1 °</u>
----------------	--------------	-----------------	--------------

ROLL ANGLES

Front Bumper	<u>0.1 °</u>	Rear Bumper	<u>0.5 °</u>
--------------	--------------	-------------	--------------

FULLY LOADED:**PITCH ANGLES**

Left Door Sill	<u>0.2 °</u>	Right Door Sill	<u>0.3 °</u>
----------------	--------------	-----------------	--------------

ROLL ANGLES

Front Bumper	<u>0.0 °</u>	Rear Bumper	<u>0.5 °</u>
--------------	--------------	-------------	--------------

AS TESTED:**PITCH ANGLES**

Left Door Sill	<u>0.2 °</u>	Right Door Sill	<u>0.2 °</u>
----------------	--------------	-----------------	--------------

ROLL ANGLES

Front Bumper	<u>0.0 °</u>	Rear Bumper	<u>0.5 °</u>
--------------	--------------	-------------	--------------

DATA SHEET 2-4
TARGET MEASUREMENT REFERENCE SHEET

Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR32EX3C078949
 Vehicle NHTSA No.: C35J01 Month & Year of Manufacture: Sept. 02

Measurements	Description	Left Side	Right Side
M	Seat fore / Aft travel (Front seats)	238	238
T° DRIVER SIDE	Horizontal angle {CG-F1 (Left seat) to (Right A-pillar)}	110	-
A1° DRIVER SIDE	$360^\circ - T^\circ$	250	-
W° DRIVER SIDE	Horizontal angle {CG-F2 (Left seat) to (Left A-pillar)}	199	-
A2° DRIVER SIDE	$A2^\circ = W^\circ$	199	-
U° DRIVER SIDE	Horizontal angle {CG-F2 (Left seat) to (Left B-pillar)}	273	-
B1° DRIVER SIDE	$B1^\circ = U^\circ$	273	-
V° DRIVER SIDE	Horizontal angle {CG-FR (Left seat) to (Right B-pillar)}	216	-
B2° DRIVER SIDE	$B2^\circ = V^\circ$	216	-
W° PASSENGER SIDE	Horizontal angle {CG-F2 (Right seat) to (Right A-pillar)}	-	161
A1° PASSENGER SIDE	$A1^\circ \text{ (Right)} = W^\circ \text{ (Right)}$	-	161
T° PASSENGER SIDE	Horizontal angle {CG-F1 (Right seat) to (Left A-pillar)}	-	252
A2° PASSENGER SIDE	$360^\circ - T^\circ \text{ (Right)}$	-	108
V° PASSENGER SIDE	Horizontal angle {CG-FR (Right seat) to (Right B-pillar)}	-	145
B1° PASSENGER SIDE	$B1^\circ \text{ (Right)} = V^\circ \text{ (Right)}$	-	145
U° PASSENGER SIDE	Horizontal angle {CG-F2 (Right seat) to (Right B-pillar)}	-	86
B2° PASSENGER SIDE	$B2^\circ \text{ (Right)} = U^\circ \text{ (Right)}$	-	86
J	A-pillar {(Plane 3) - (Plane 5)}	344	345
J/2	$J \div 2$	172	172.5
D1	Upper Roof {(Plane A) - (Plane B)}	1530	
D1/2	$D1 \div 2$	765	
D2	Upper Roof {(Plane C) - (Plane D)}	1140	
D2/2	$D2 \div 2$	570	
.35D1	.35 x D1	535.5	
.35D2	.35 x D2	399	
N	B-pillar {(BPR) - (lowest point on the daylight opening forward of B-pillar)}	424	420
N/2	B pillar {(BP3) - (lowest point on the daylight opening forward of B-pillar)}	212	210

Measurement	Description	Left Side	Right Side
N/4	B-pillar {(BP3) - (lowest point on the daylight opening forward of B-pillar)}	106	105
Q	Other-pillar {(OPR) - (lowest point on the daylight opening forward of O-pillar)}	-	-
Q/2	Other-pillar {(OP2) - (lowest point on the daylight opening forward of O-pillar)}	-	-
D	{(Corner of roof area, point 7) - (roof area center, point M)}	670	669
3D/7	$(3 \times D) \div 7$	287	287
MM	Widest door opening of slider door	-	-
M	$MM \div 2$	-	-

DATA SHEET 2-5

APPROACH ANGLE LIMITS

Left Side					Right Side				
Target Code	Horizontal Angles (deg.)		Vertical Angles (deg.)		Target Code	Horizontal Angles (deg.)		Vertical Angles (deg.)	
	Minimum	Maximum	Minimum	Maximum		Minimum	Maximum	Minimum	Maximum
AP1	199	250	-5	16	AP1	108	161	-5	17
AP2	199	250	-5	50	AP2	108	161	-5	50
AP3	199	250	-5	50	AP3	108	161	-5	50
BP1	216	273	-10	13	BP1	86	145	-10	12
BP2	ANY		0	4	BP2	ANY		0	6
BP3	216	273	-10	-8	BP3	86	145	-10	-8
BP4	216	273	-10	-6	BP4	86	145	-10	-5
OP1	270		-	-	OP1	90		-	-
OP2	270		-	-	OP2	90		-	-
RP1	270	345	-10	16	RP1	15	90	-10	16
RP2	270	345	-10	17	RP2	15	90	-10	16
FH1	180		0	50	FH1	180		0	50
FH2	180		0	50	FH2	180		0	50
RH	360		0	50	RH	0		0	50
SR1	270		0	22	SR1	90		0	11
SR2A	270		0	25	SR2A	90		0	10
SR2B	270		0	23	SR2B	90		0	10
SR3	270		0	10	SR3	90		0	15
SD	270		0	-	SD	90		0	-
UR	ANY		0	47	UR	ANY		0	50

Note: BP2 target location - Adjustable seat belt anchorage

DATA SHEET 2-6

POST-TEST VISUAL INSPECTION

Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
Vehicle Body Color: White VIN: 2T1BR32EX3C078949
Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

REMARKS:

1. During SRI impact, the grab handle screw cap dislodged.
2. After impacting BP1, the head rebounded into and dislodged the seat belt anchorage cover.

DATA SHEET 2-7

TARGET IMPACT LOCATION ON FMII SUMMARY

Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR32EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02



← RIGHT SIDE OF FACE

TARGET	Distance Above Pt. O (mm)	Distance Over From Pt. O (mm)
AP3	17	3 to the left
AP1	18	35 to the right
RP1	2	70 to the right
BP3	24	19 to the right
SR2A	7	33 to the left
BP1	46	7 to the left
RP2	14	2 to the left
BP2	10	4 to the left
URBP	41	5 to the left
SR1	20	2 to the right

SECTION 3
SUMMARY OF TEST RESULTS AND DATA PLOTS

TEST SUMMARY SHEET FOR FMVSS 201/0 TESTING

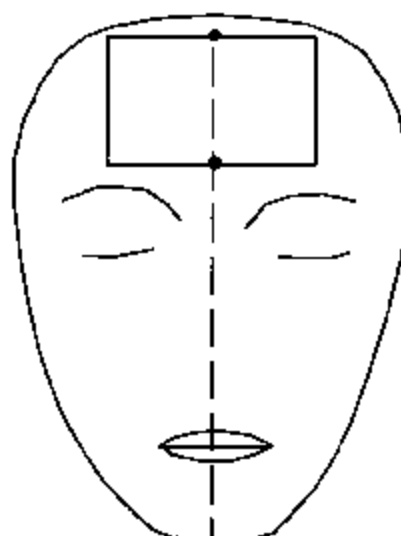
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2F1BR32EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

Test Number: 1 Test Date: 11/21/02
 Target Location: PASSENGER SIDE A-PILLAR Target Code: AP3
 Horizontal Impact Angle: 15.5° Vertical Impact Angle: 50°
 Ambient Temperature: 22 °C Time of Impact: 10:05
 Headform Number: 805

Impact Point:

Description:

Description: From lower midpoint					
On centerline	17	mm up			
On centerline	3	x	mm right	x	mm left



Free Motion HIC: 513.7 HIC(d): 553.7
 Impact Velocity (kph): 23.51 HIC1 0.9 msec HIC12 9.9 msec

Post-Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - AP.

FMH Headform 0805

Location: AP3

Test Date: November 21, 2002

Work File: AP3

TEST RESULTS

Lab Temperature: 22 C

HICd: 553.9

Lab Humidity: 20 %

HIC (36ms): 513.7

Velocity at Impact: 23.57 KPH

t1: 0.9 msec

t2: 9.9 msec

Free Flight Distance: 220.54 mm

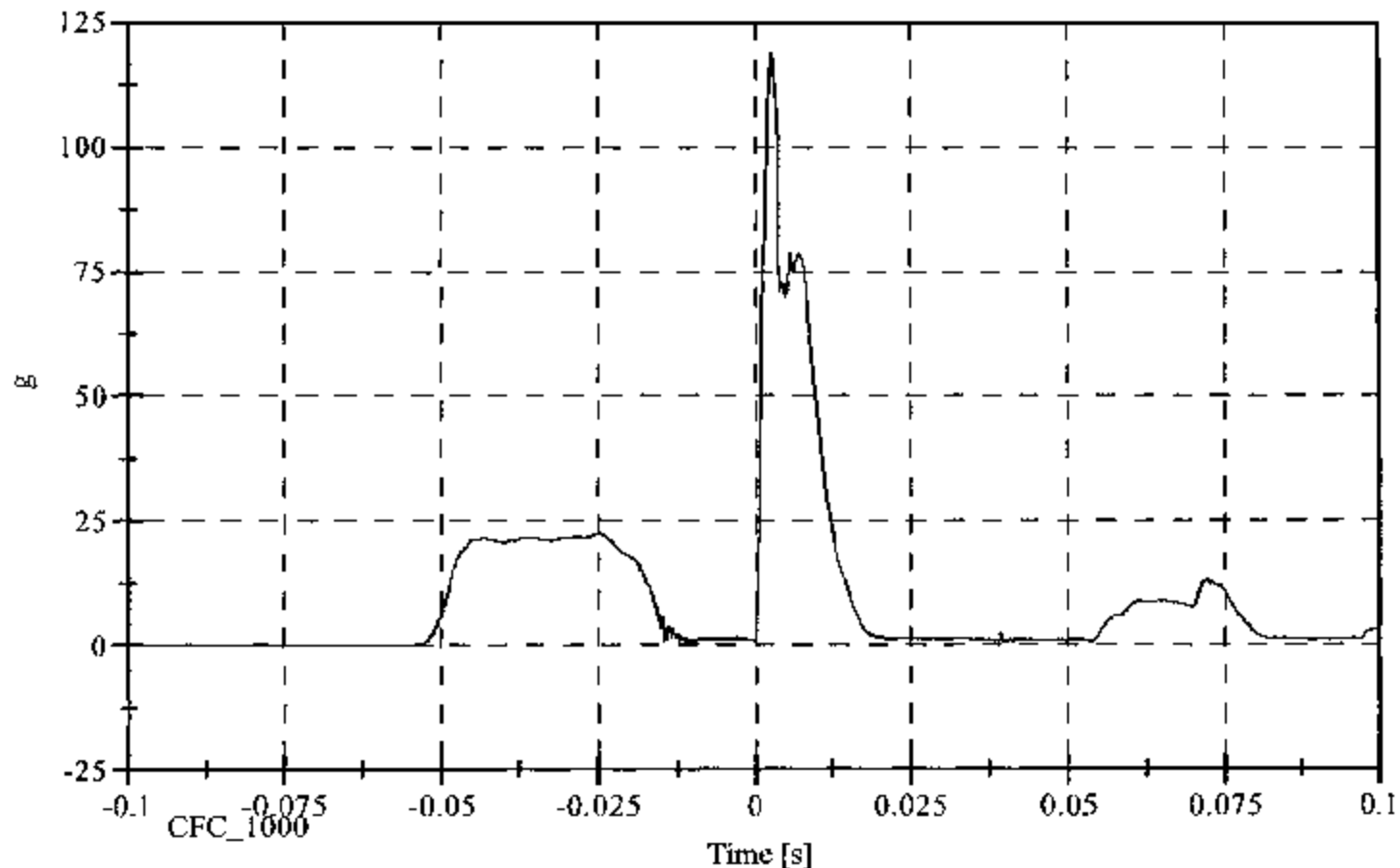
Duration: 9.0 msec

Average Acceleration: 9.4 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 119.0 [g] at 0.003 [s]

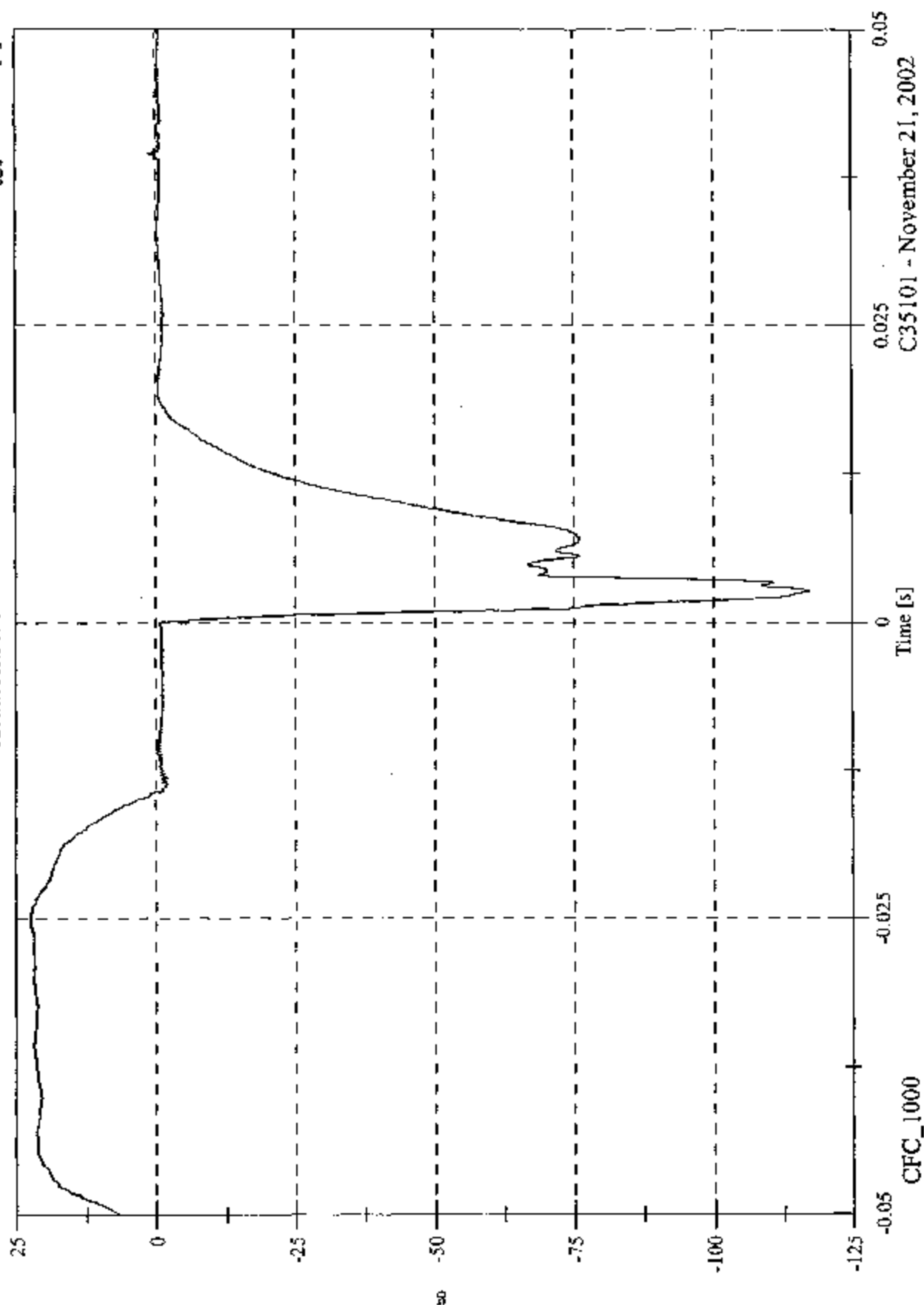
Min: -0.0 [g] at -0.099 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform X Acceleration

Max: 22.6 [g] at -0.025 [s]

Min: -117.2 [g] at 0.003 [s]



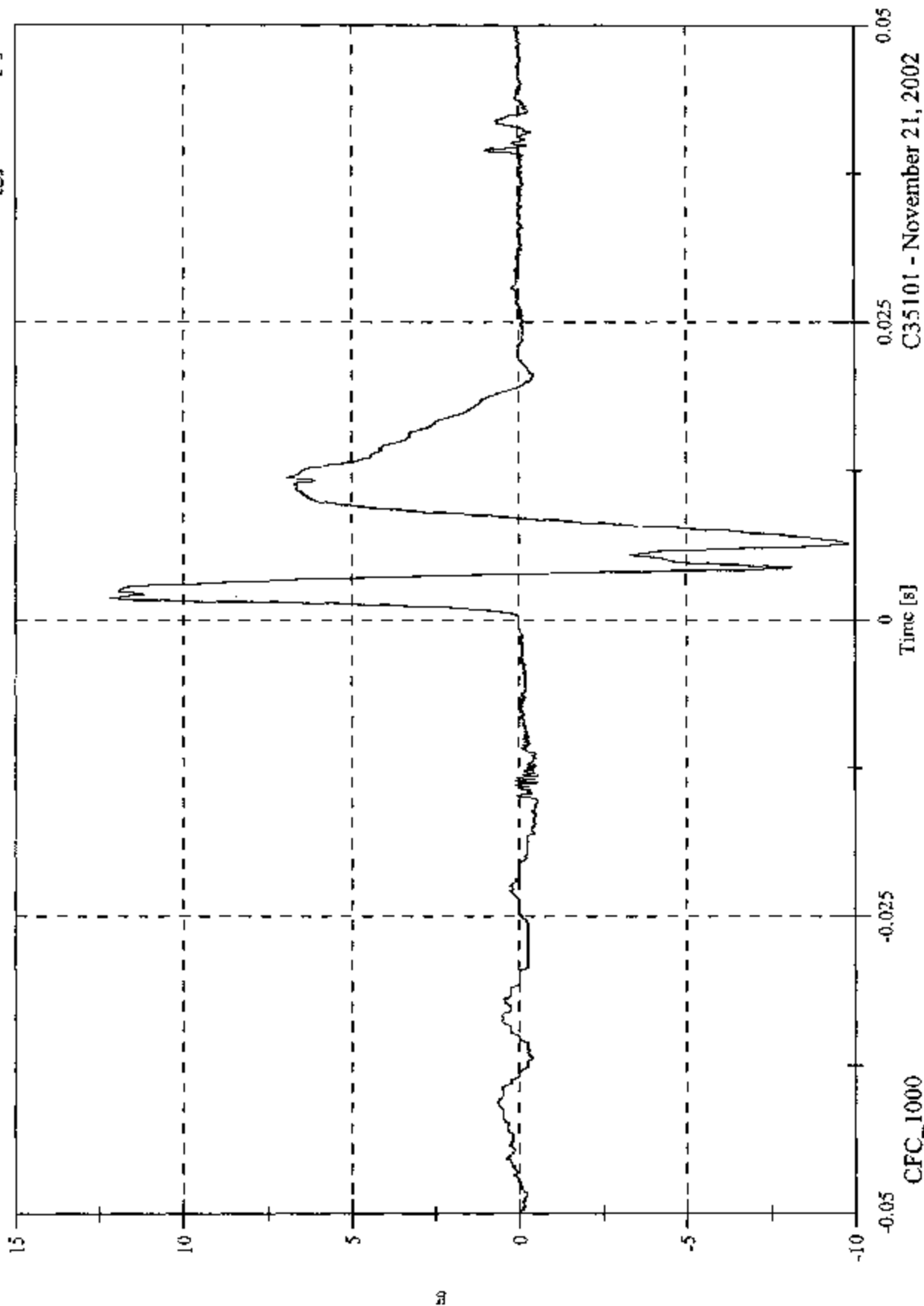
C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Y Acceleration

Max: 12.2 [g] at 0.002 [s]

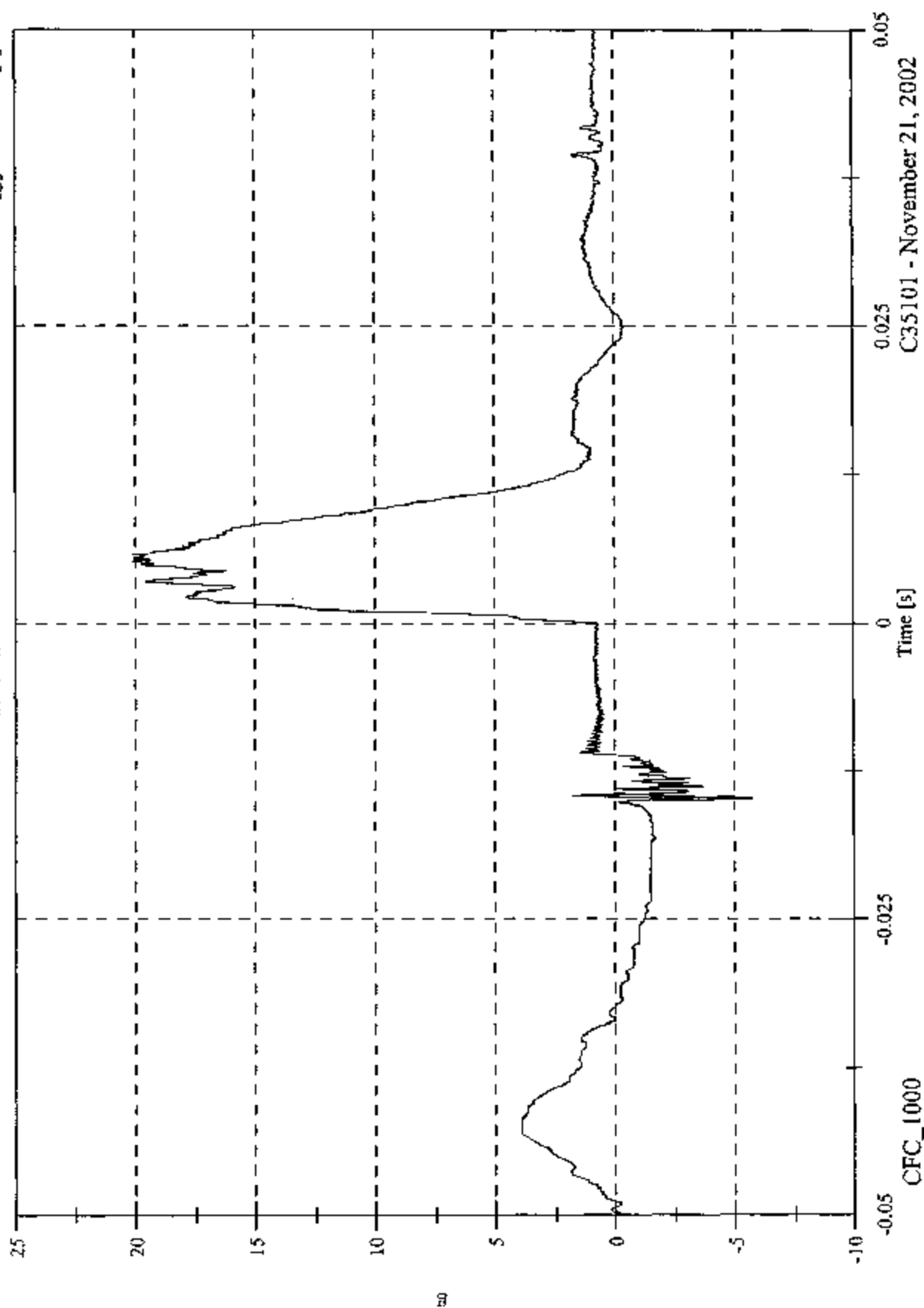
Min: -9.8 [g] at 0.006 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Z Acceleration

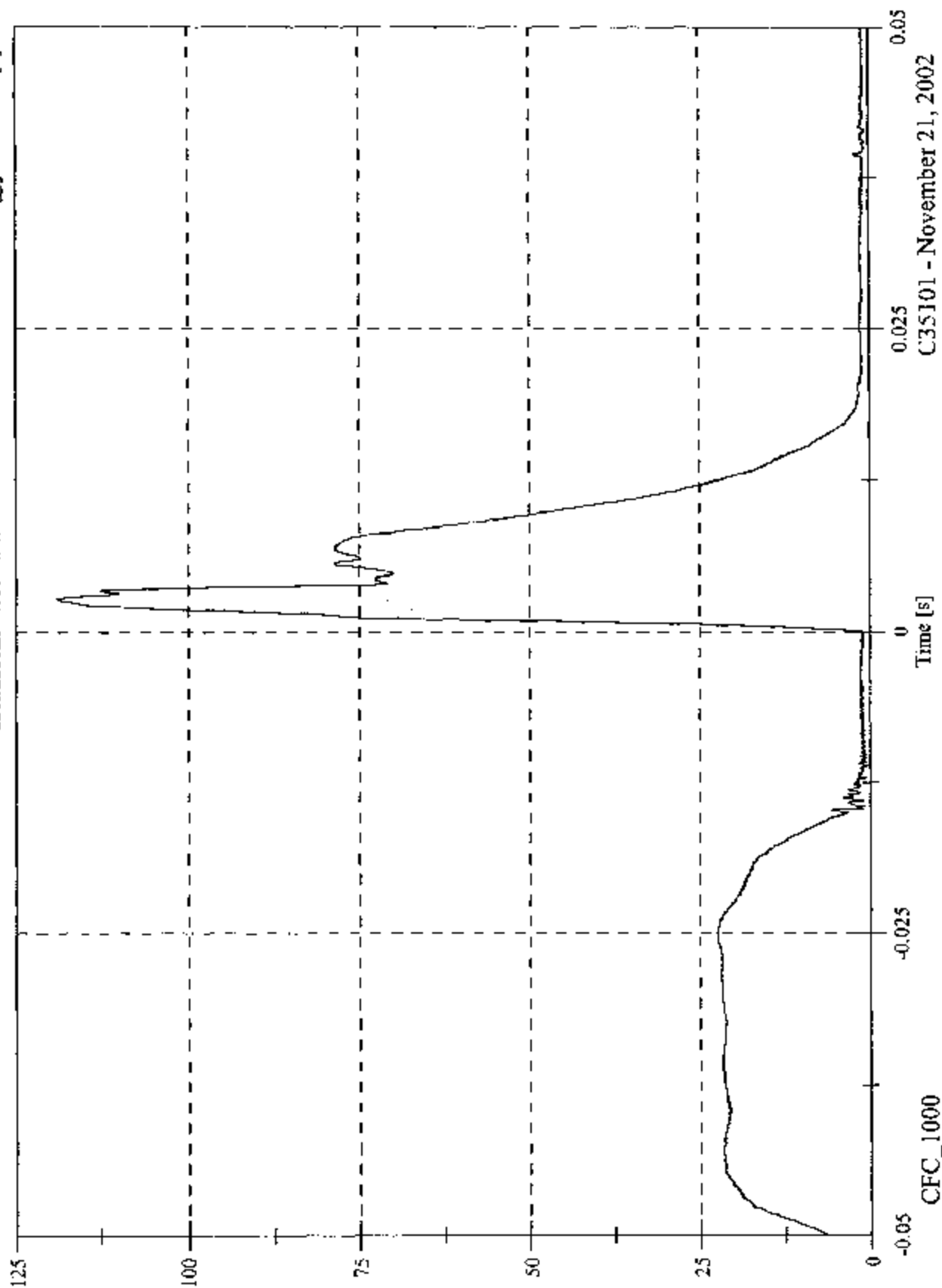
Max: 20.2 [g] at 0.005 [s]

Min: -5.7 [g] at -0.015 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 119.0 [g] at 0.003 [s]
Min: 0.4 [g] at -0.011 [s]

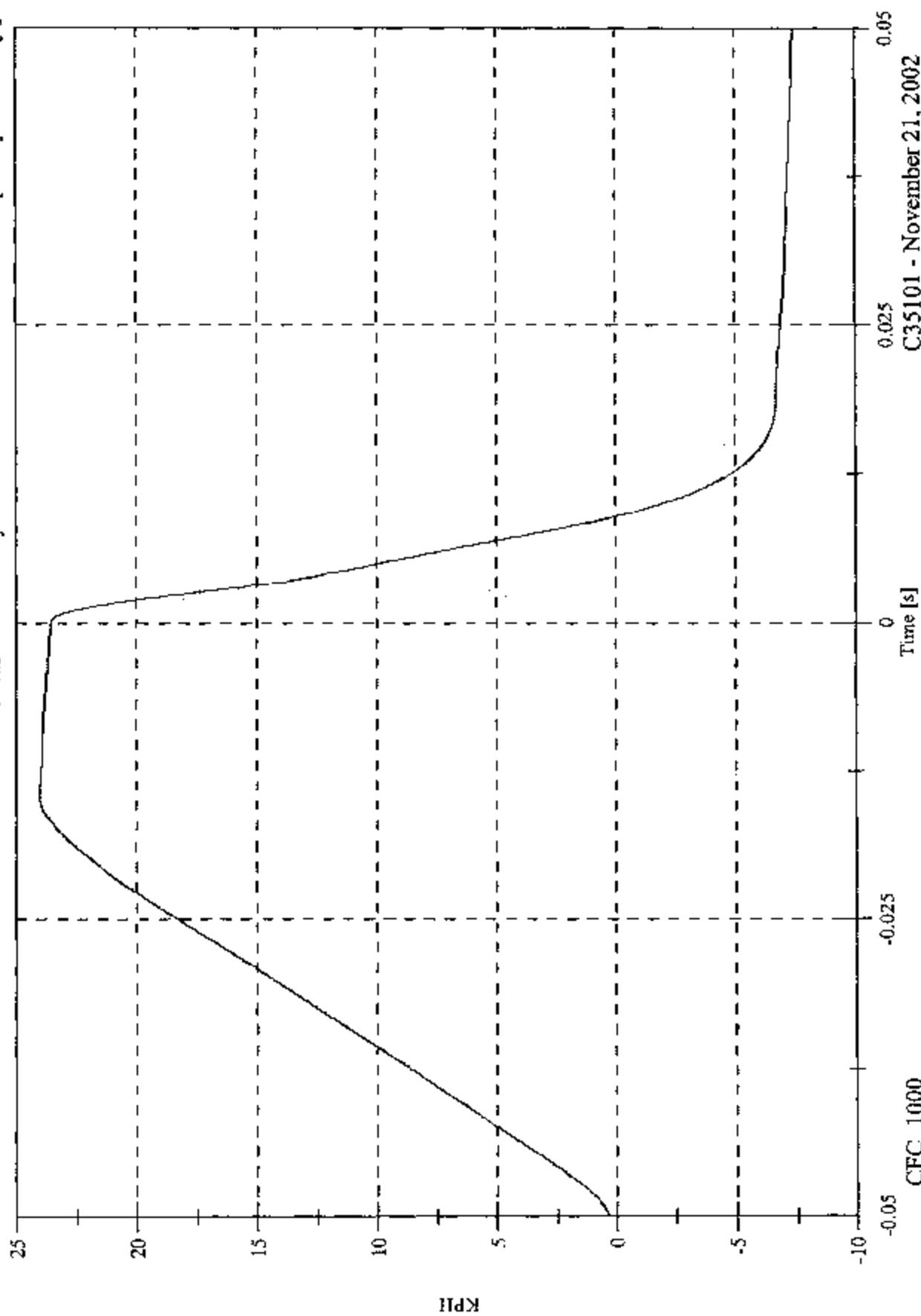


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Velocity

Max: 24.1 [KPH] at -0.014 [s]

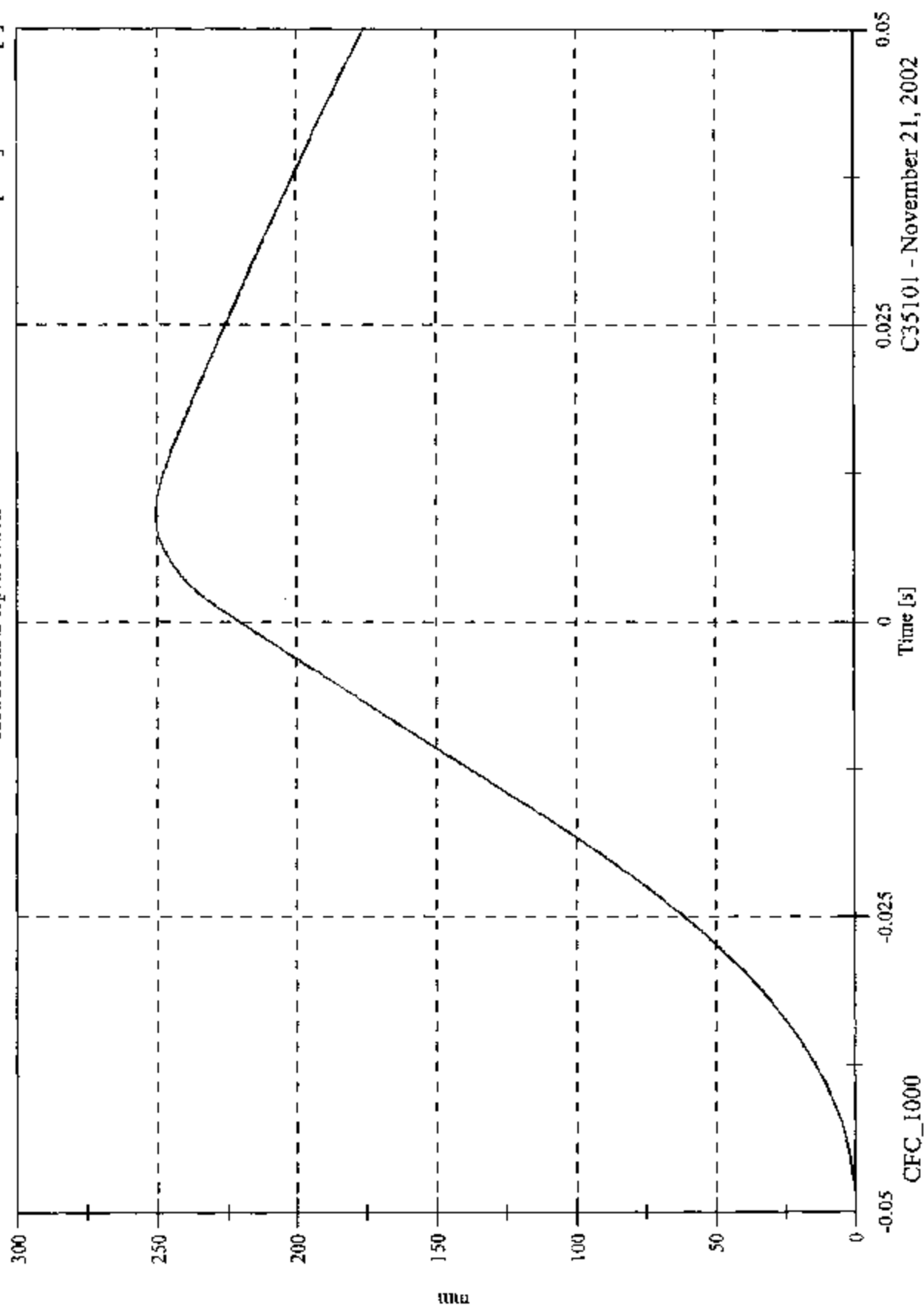
Min: -7.4 [KPH] at 0.050 [s]



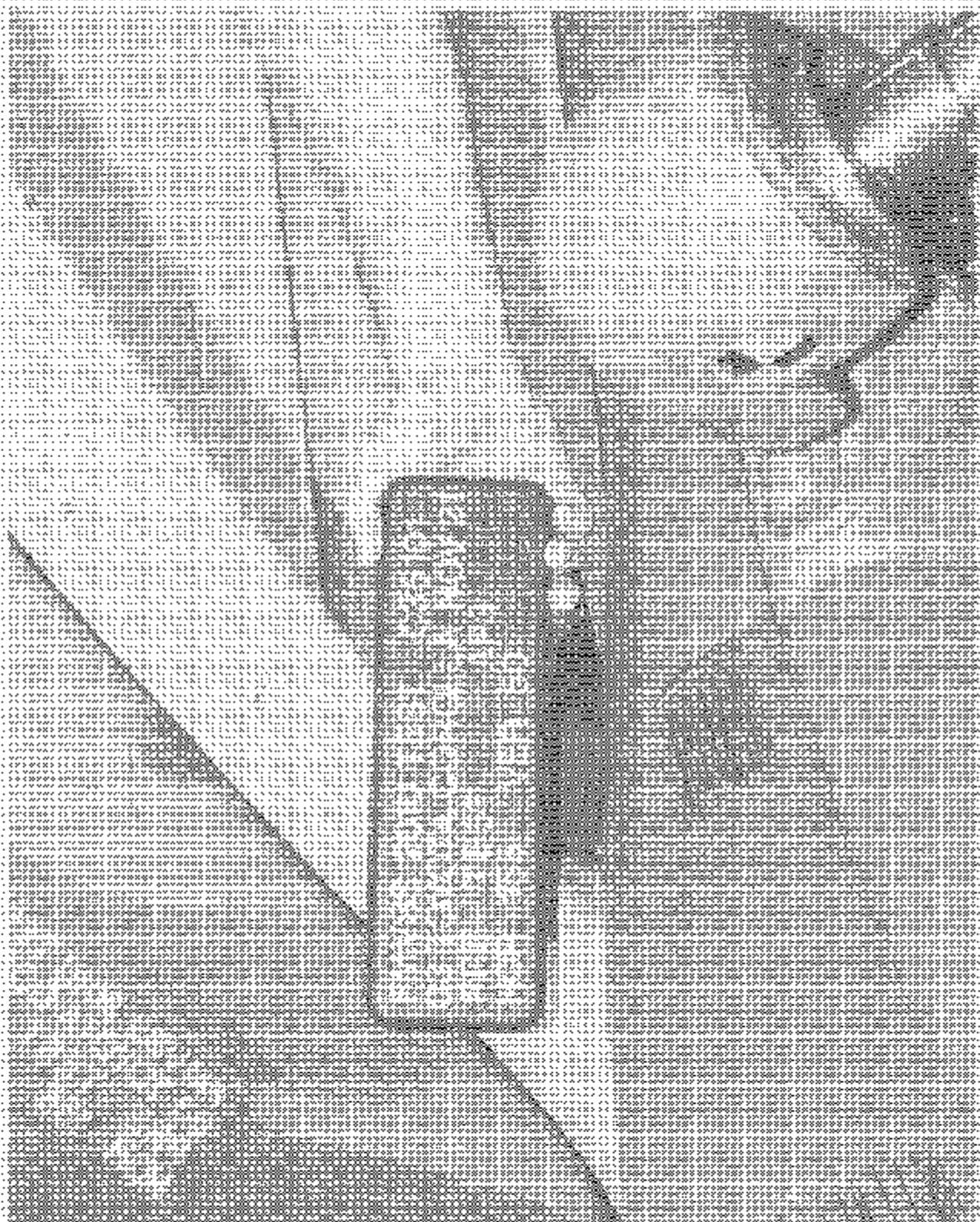
C35101 - November 21, 2002

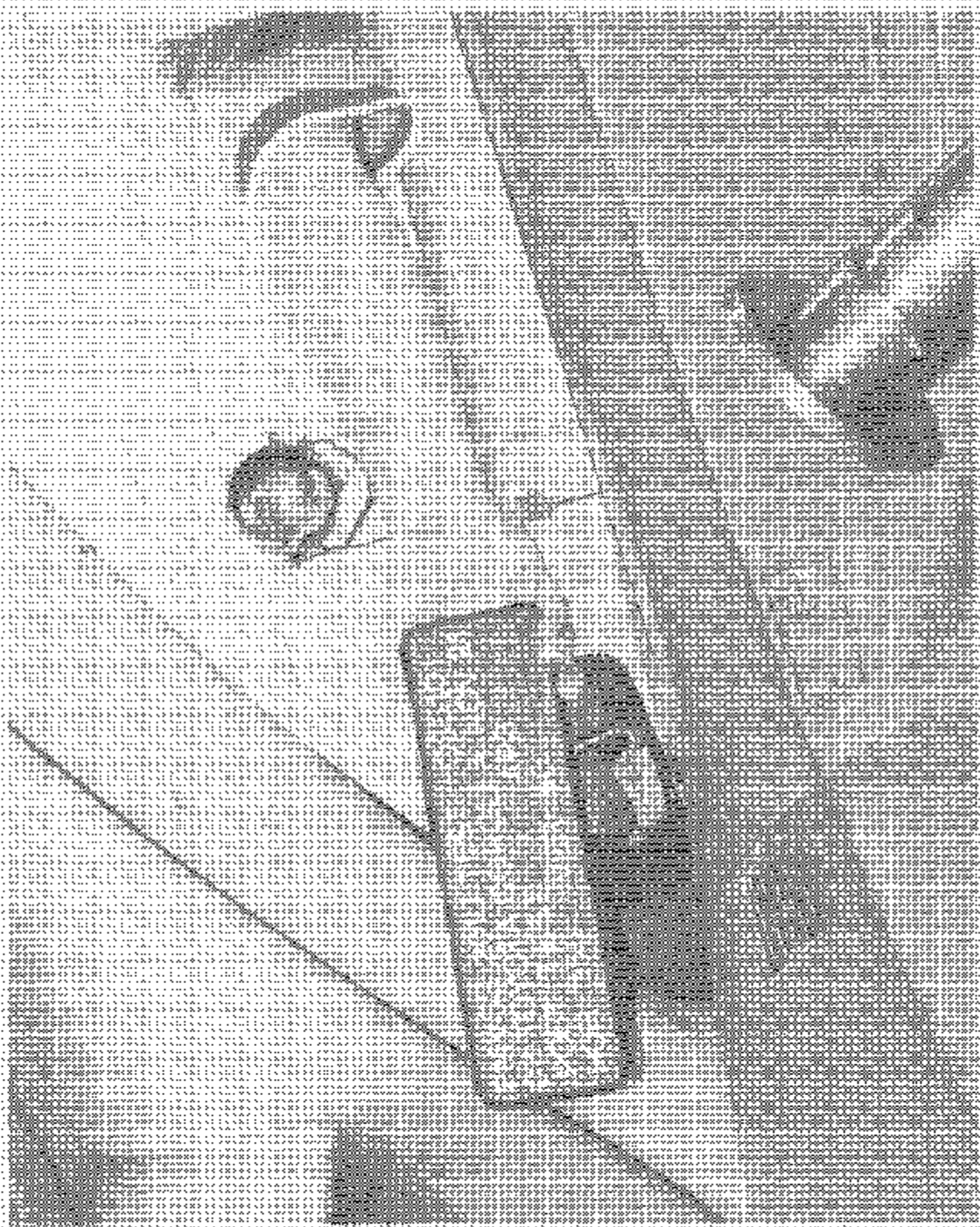
FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Displacement

Max: 250.5 [mm] at 0.009 [s]
Min: 0.2 [mm] at -0.050 [s]



C35101 - November 21, 2002





FMVSS 2010 TEST C35101
03 TOYOTA COHOLLA NOV 21
PQBT TEST AP8
HOF 155 VER 50

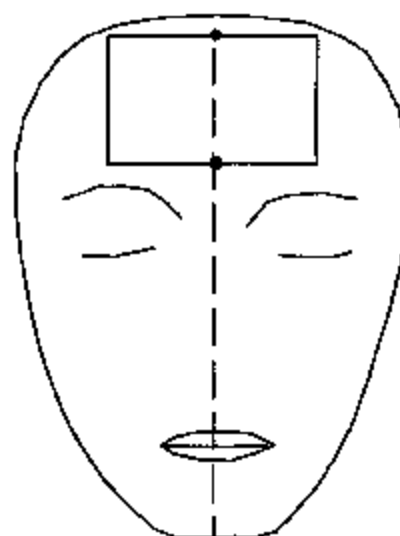
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR32EX30078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

Test Number: 2 Test Date: 11/21/02
 Target Location: PASSENGER SIDE A-PILLAR Target Code: AP1
 Horizontal Impact Angle: 124° Vertical Impact Angle: 16°
 Ambient Temperature: 22 °C Time of Impact: 11:10
 Headform Number: 0062

Impact Point:

Description:

Description:	From lower midpoint				
On centerline	35	mm up			
On centerline	18	x	mm right	-	mm left



Free Motion HIC: 671.1 HIC(d): 673.5
 Impact Velocity (kph): 23.60 HIC1 2.0 msec HIC2 7.9 msec

Post-Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - AP1

FMH Headform 0062

Location: AP1

Test Date: November 21, 2002

Work File: AP1

TEST RESULTS

Lab Temperature: 22 C

HICd: 673.5

Lab Humidity: 20 %

HIC (36ms): 672.1

Velocity at Impact: 23.60 KPH

t1: 2.0 msec

t2: 7.9 msec

Free Flight Distance: 213.97 mm

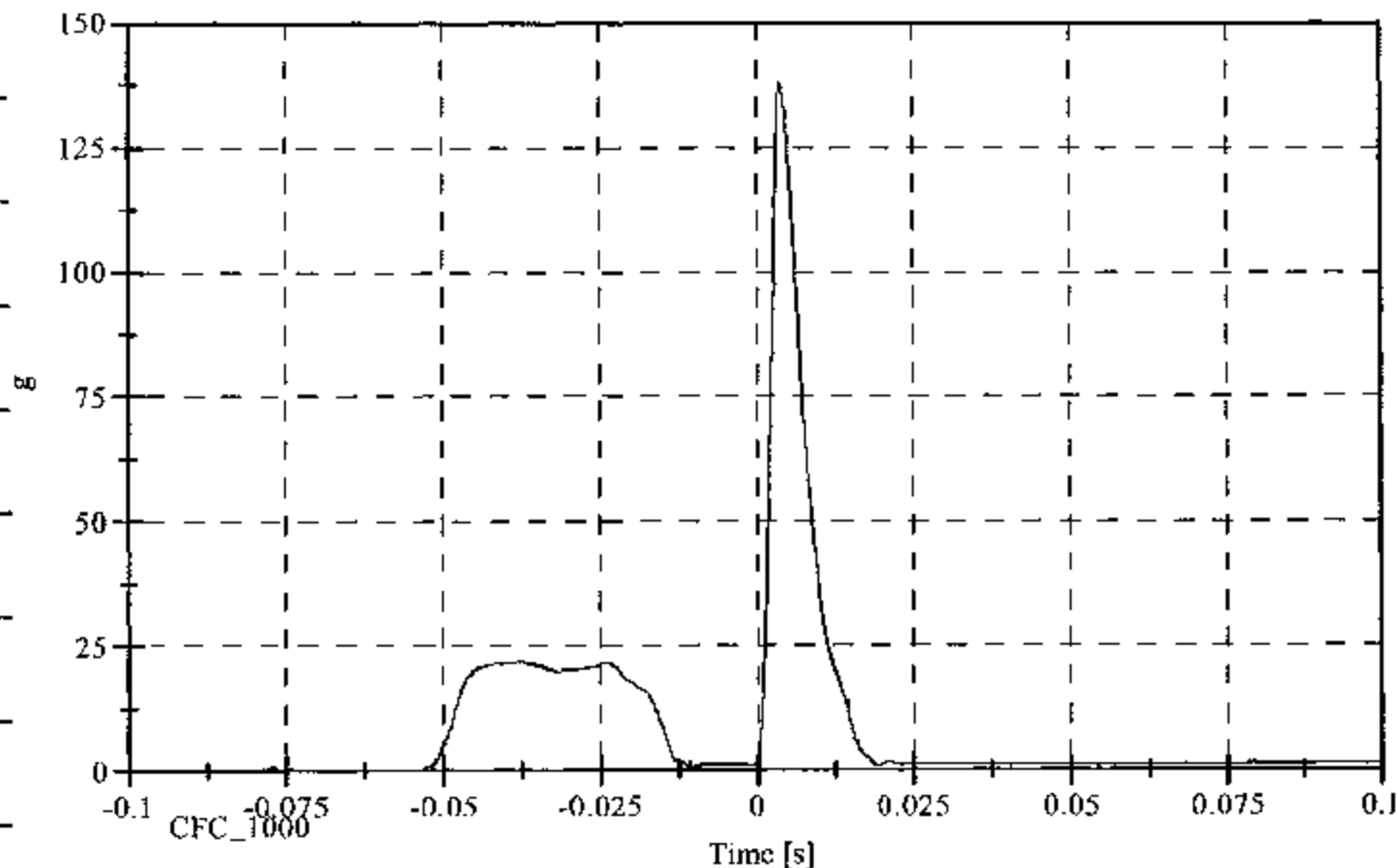
Duration: 5.8 msec

Average Acceleration: 8.4 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 137.7 [g] at 0.004 [s]

Min: 0.0 [g] at -0.066 [s]

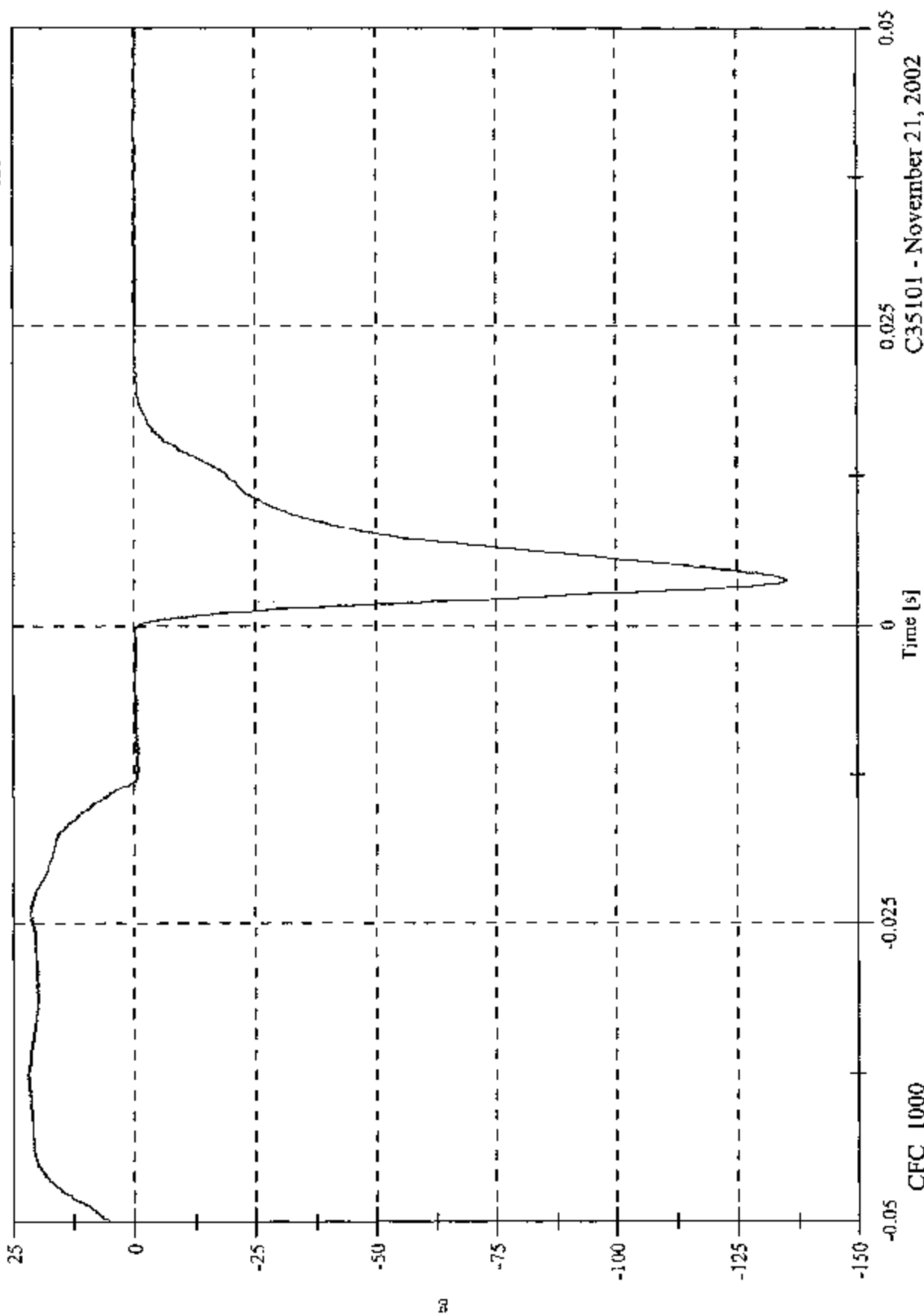


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform X Acceleration

Max: 22.0 [g] at -0.037 [s]

Min: -135.0 [g] at 0.004 [s]



CFC_1000

Time [s]

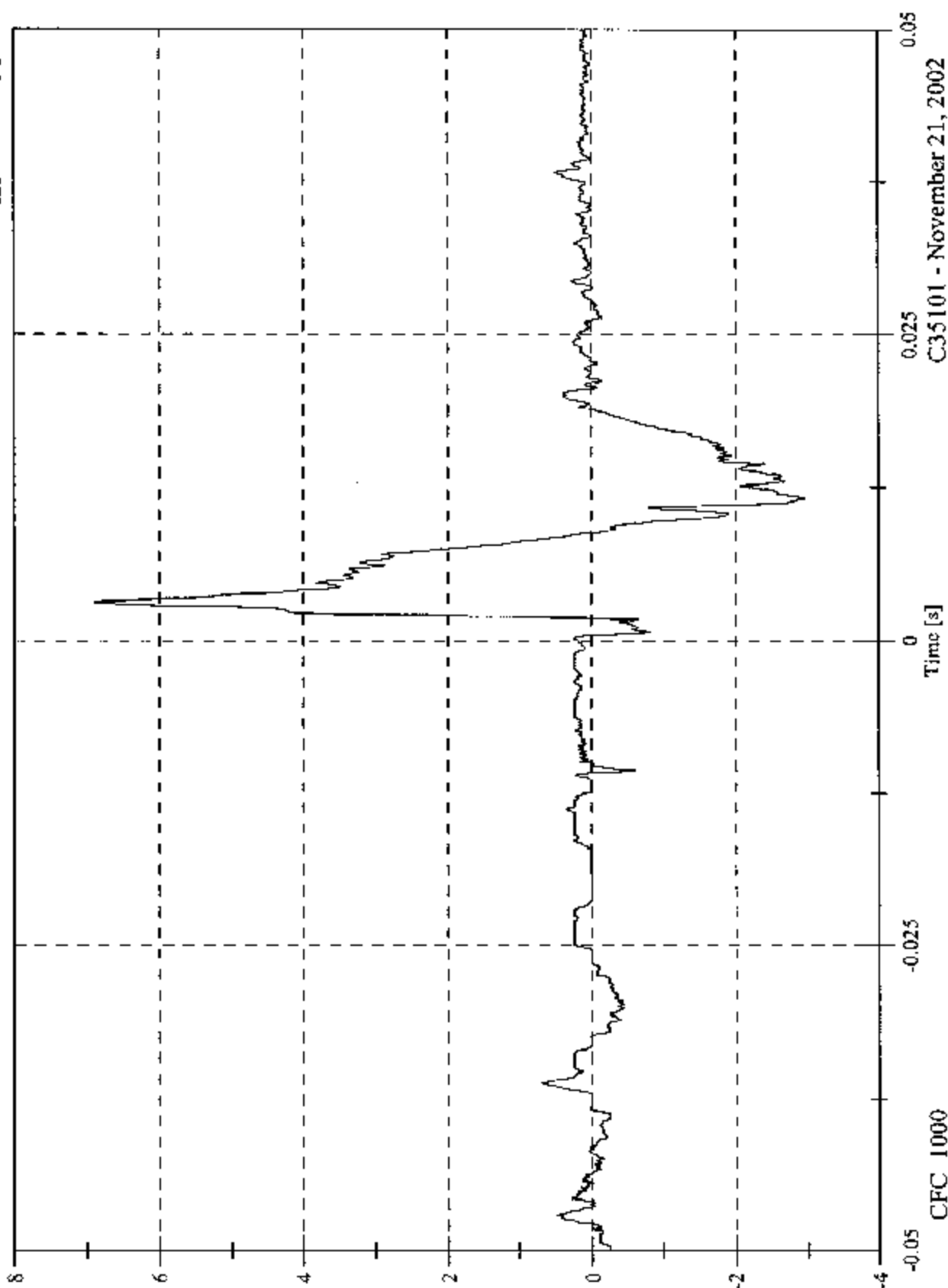
C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Y Acceleration

Max: 6.9 [g] at 0.003 [s]

Min: -2.9 [g] at 0.012 [s]

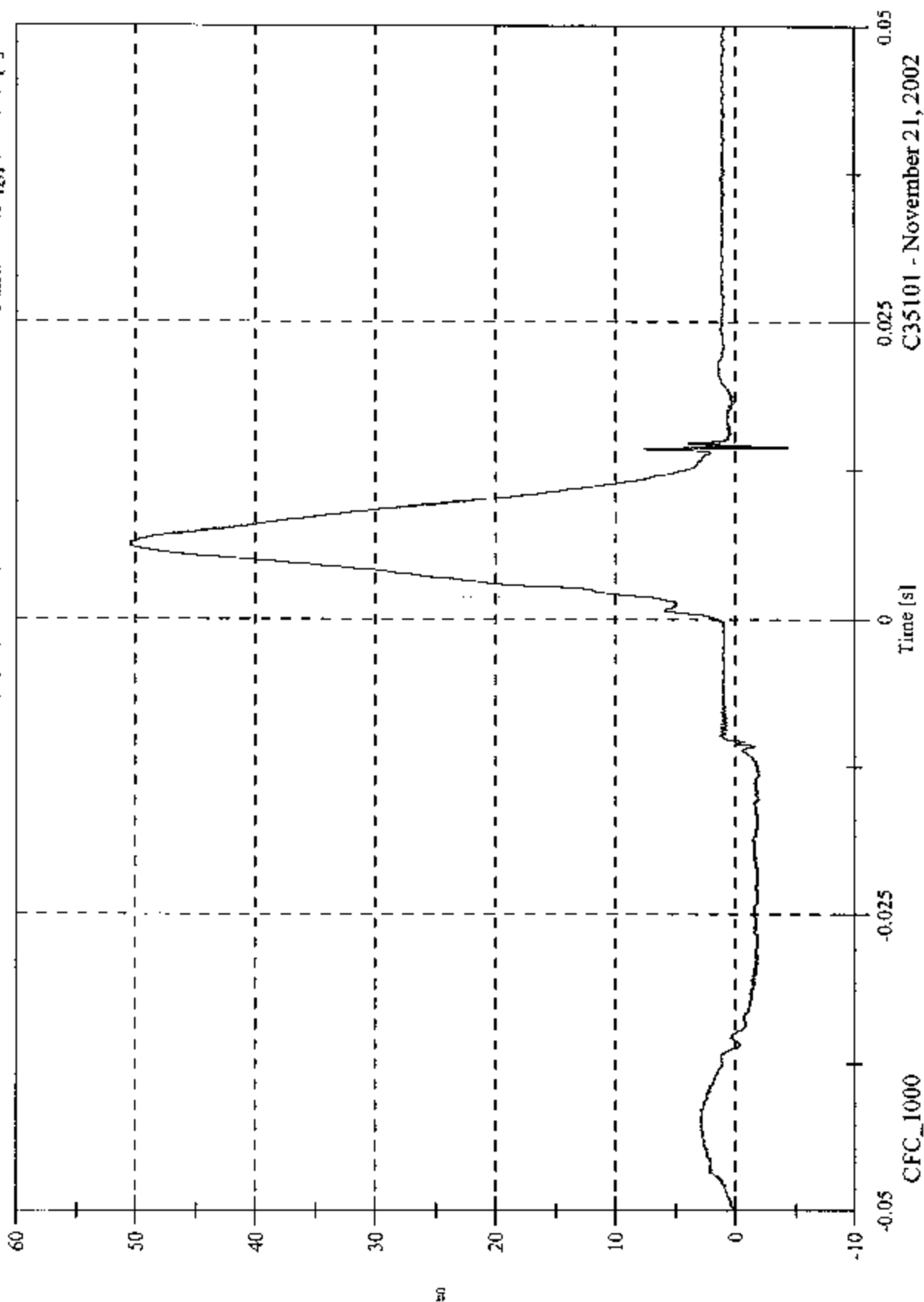


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Z Acceleration

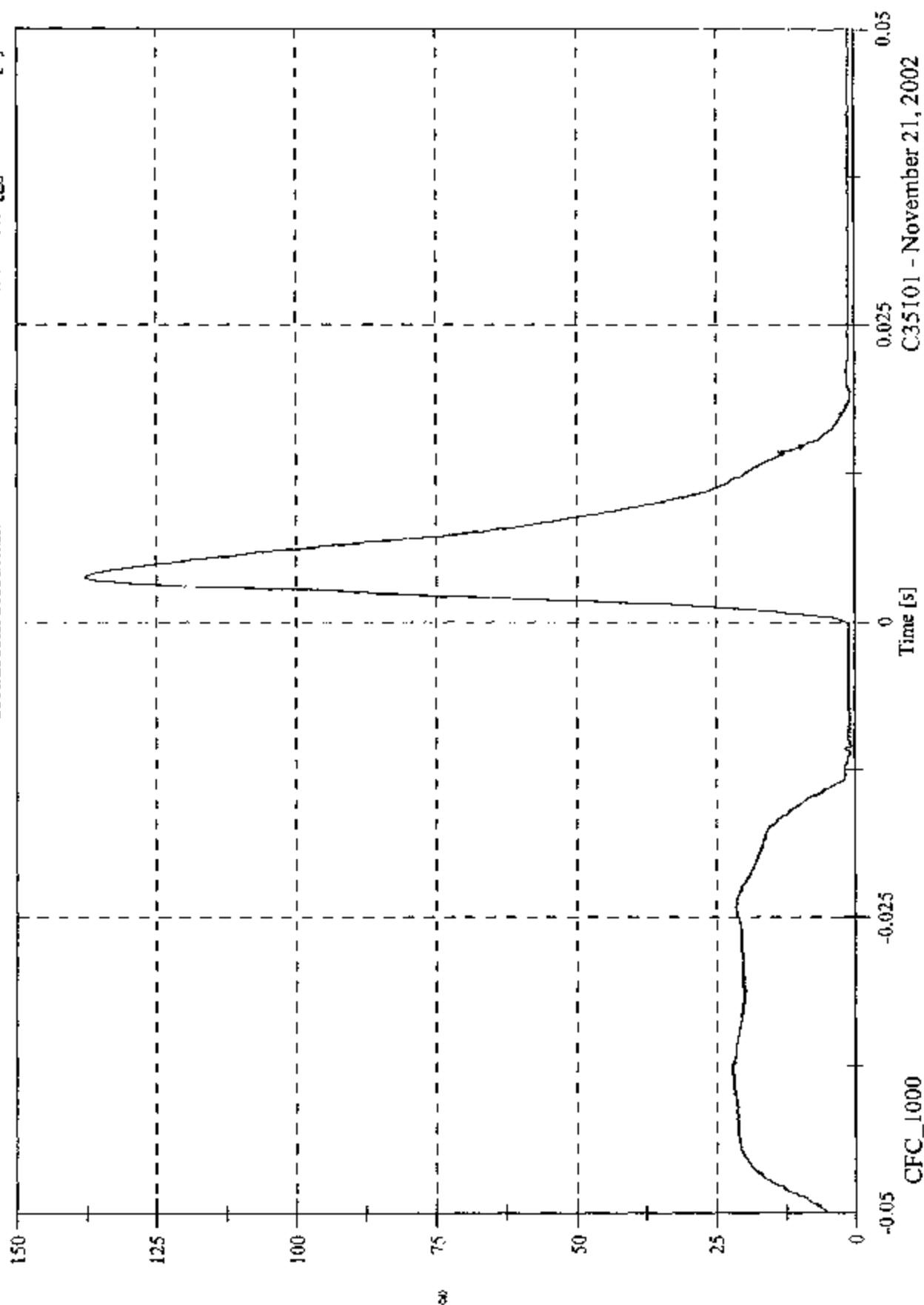
Max: 50.5 [g] at 0.006 [s]

Min: -4.3 [g] at 0.015 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 137.7 [g] at 0.004 [s]
Min: 0.5 [g] at -0.010 [s]

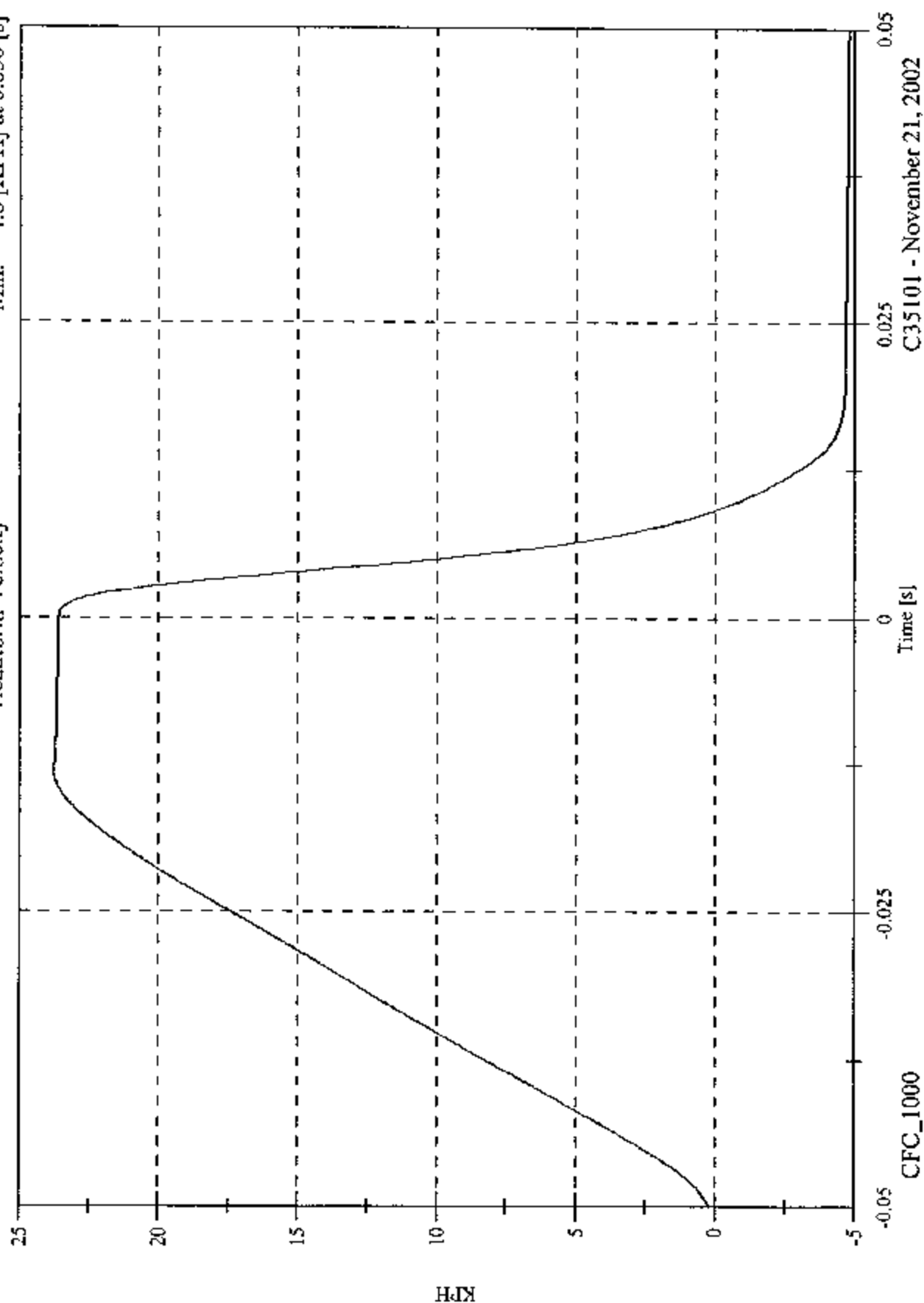


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Max: 23.8 [KPH] at -0.013 [s]

Min: -4.8 [KPH] at 0.050 [s]

Headform Velocity



CFC_1000

Time [s]

0.025

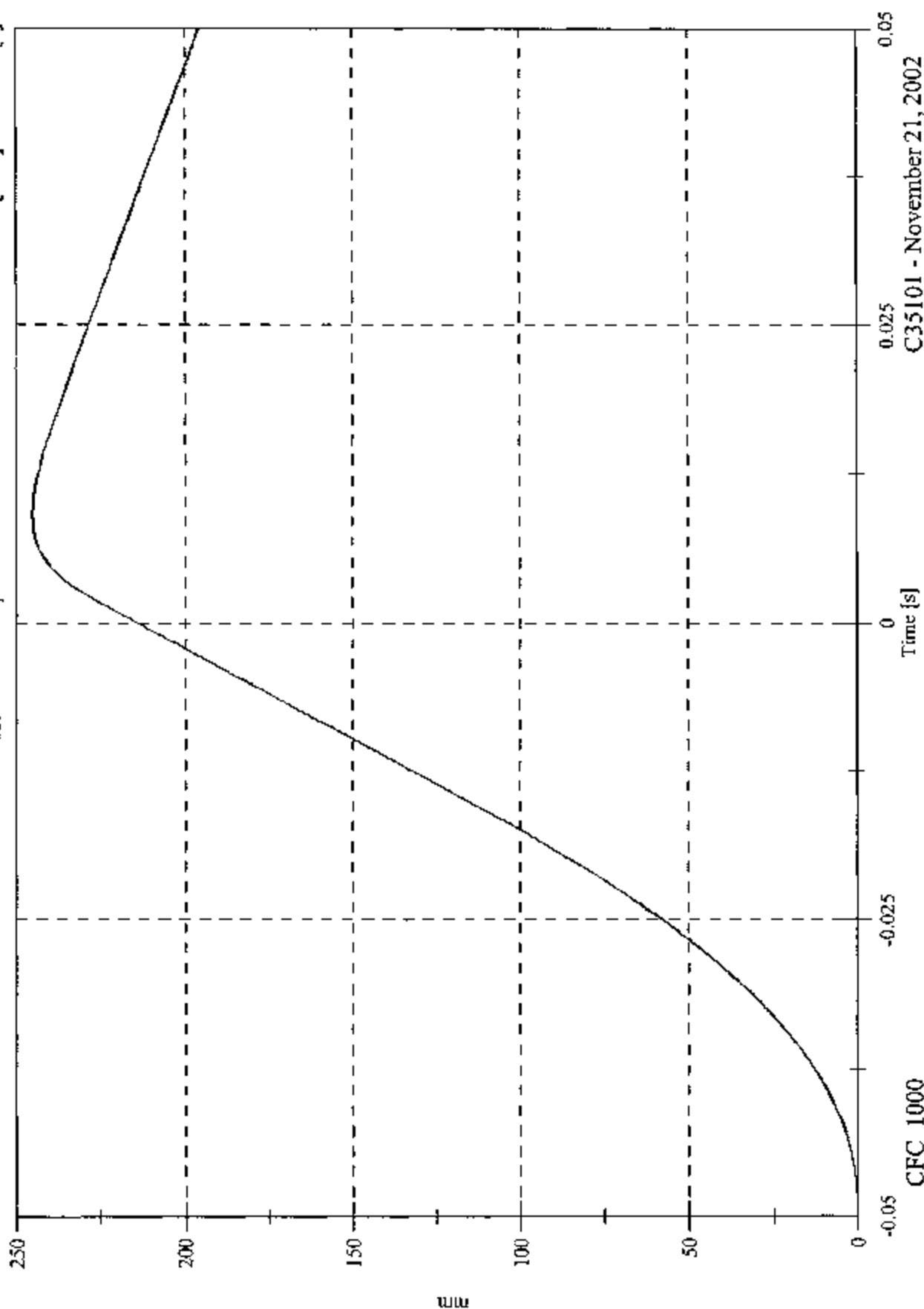
0.05

C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Displacement

Max: 245.2 [mm] at 0.009 [s]
Min: 0.1 [mm] at -0.050 [s]



C35101 - November 21, 2002



INVESTIGATE THE
TOYOTA CORP. NOW
THE TEST AM
HOW 124 VER 16



03 POST TEST APR 1968
03 POST TEST APR 1968
03 POST TEST APR 1968

[illegible]

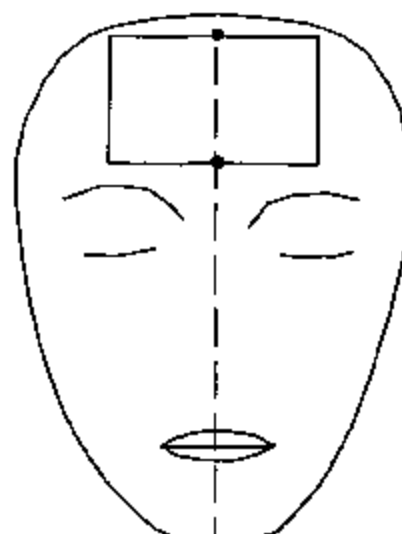
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR32EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

Test Number: 3 Test Date: 11/21/02
 Target Location: PASSENGER SIDE REAR PILLAR Target Code: RPI
 Horizontal Impact Angle: 60 ° Vertical Impact Angle: 16 °
 Ambient Temperature: 22 °C Time of Impact: 11:40
 Headform Number: 0355

Impact Point:

Description:

Description:	From lower midpoint			
On centerline	79	mm up		
On centerline	2	x	mm right	- mm left



Free Motion HIC: 475.8 HIC(d): 525.4
 Impact Velocity (kph): 23.52 HIC1: 3.7 msec HIC2: 12.3 msec

Post-Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - RP1

FMH Headform 0355

Location: RP1

Test Date: November 21, 2002

Work File: RP1

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 525.4

Lab Humidity: 20 %

IIIC (36ms): 475.8

Velocity at Impact: 23.51 KPH

t1: 3.7 msec

t2: 12.3 msec

Free Flight Distance: 217.18 mm

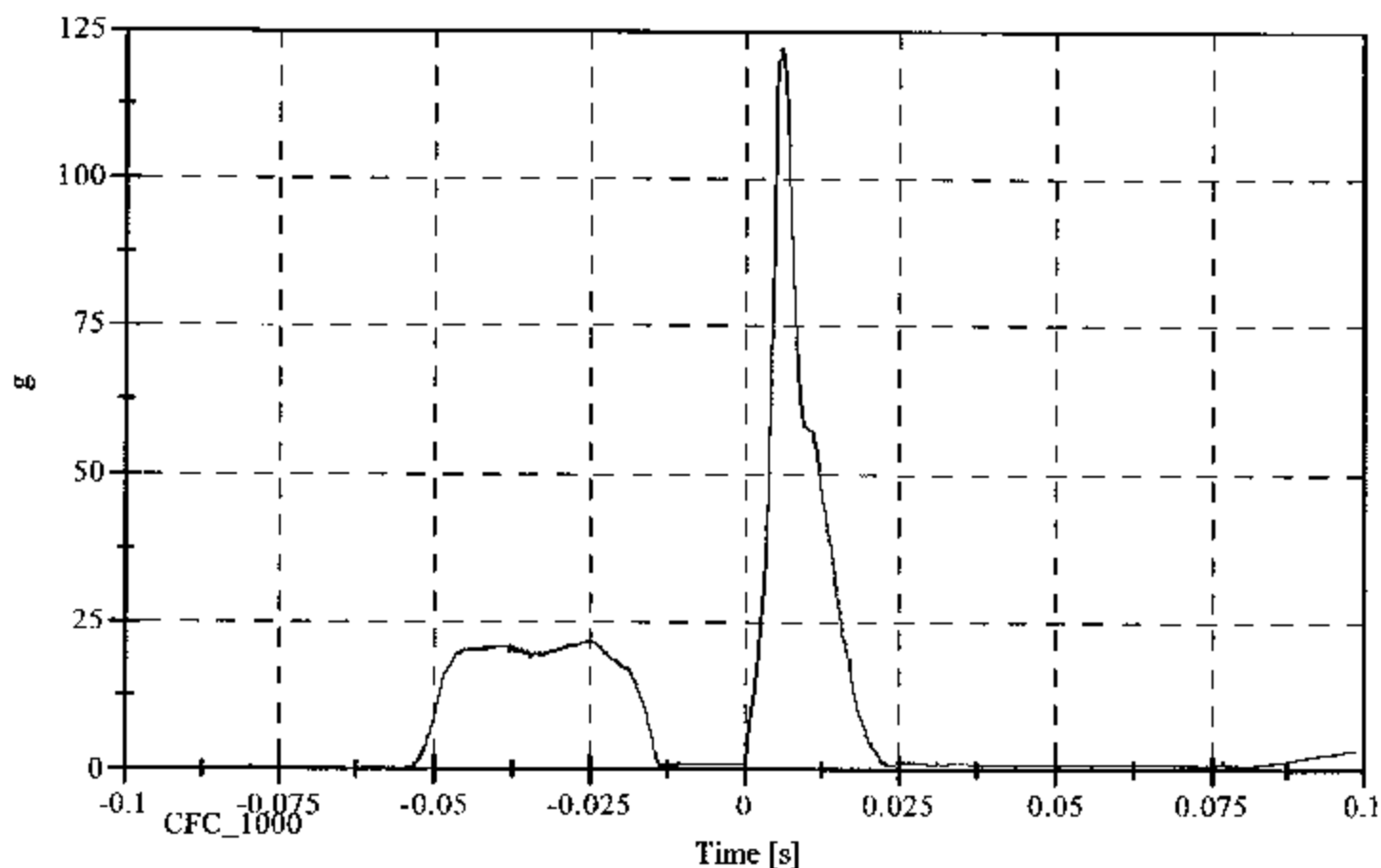
Duration: 8.6 msec

Average Acceleration: 8.7 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 122.0 [g] at 0.006 [s]

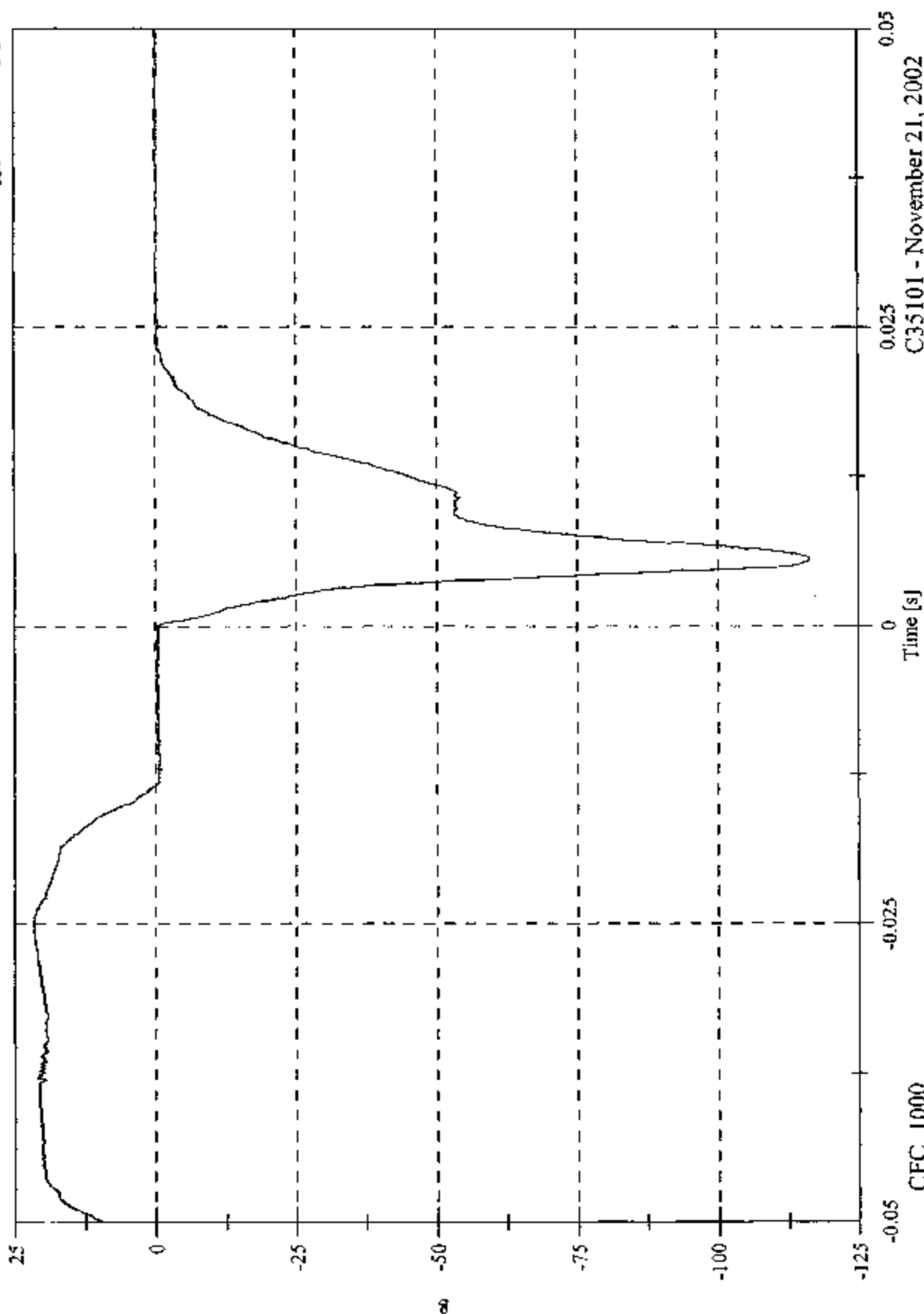
Min: 0.0 [g] at -0.082 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform X Acceleration

Max: 21.8 [g] at -0.025 [s]
Min: -116.2 [g] at 0.006 [s]

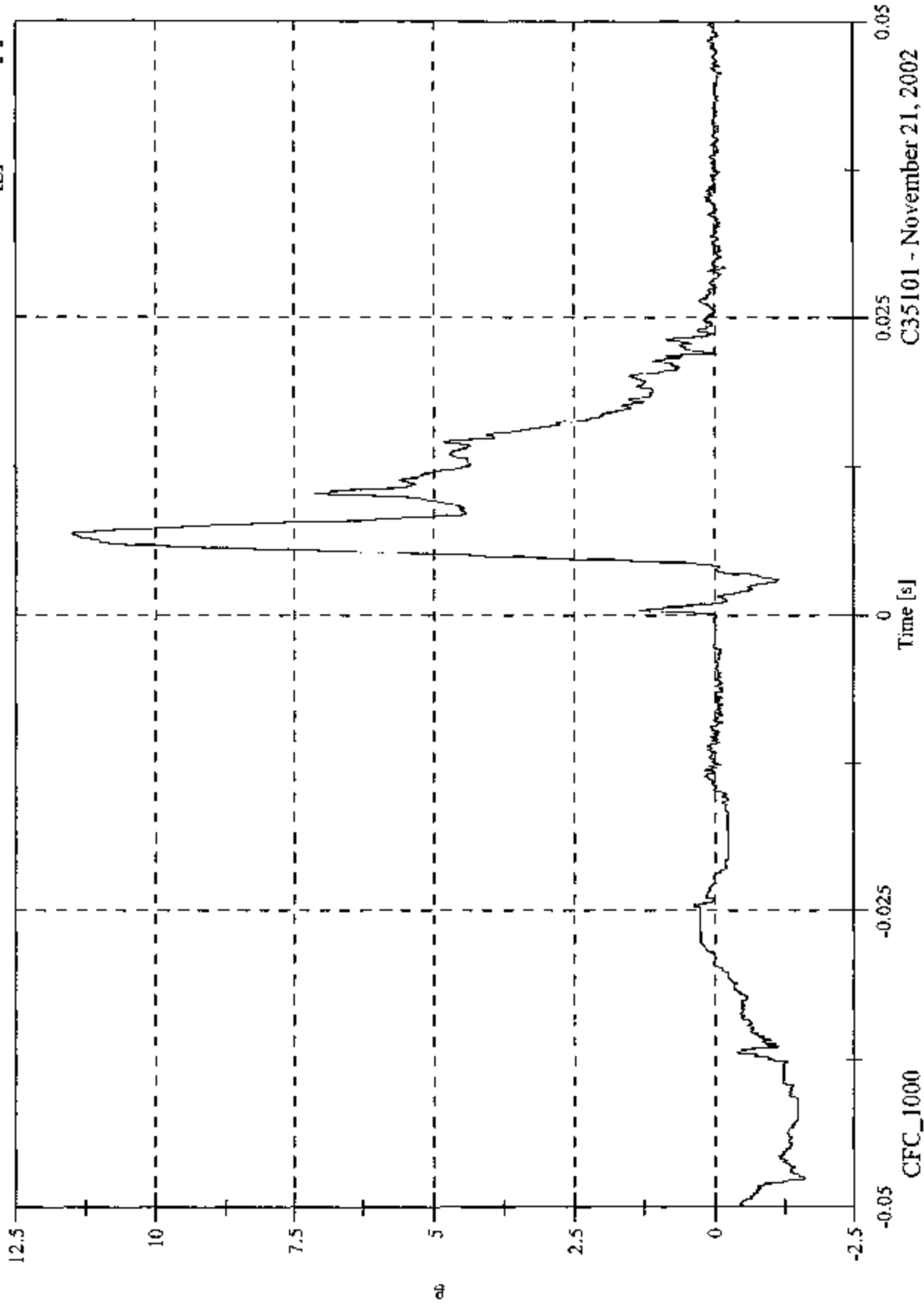


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Y Acceleration

Max: 11.5 [g] at 0.007 [s]

Min: -1.6 [g] at -0.048 [s]



CFC_1000

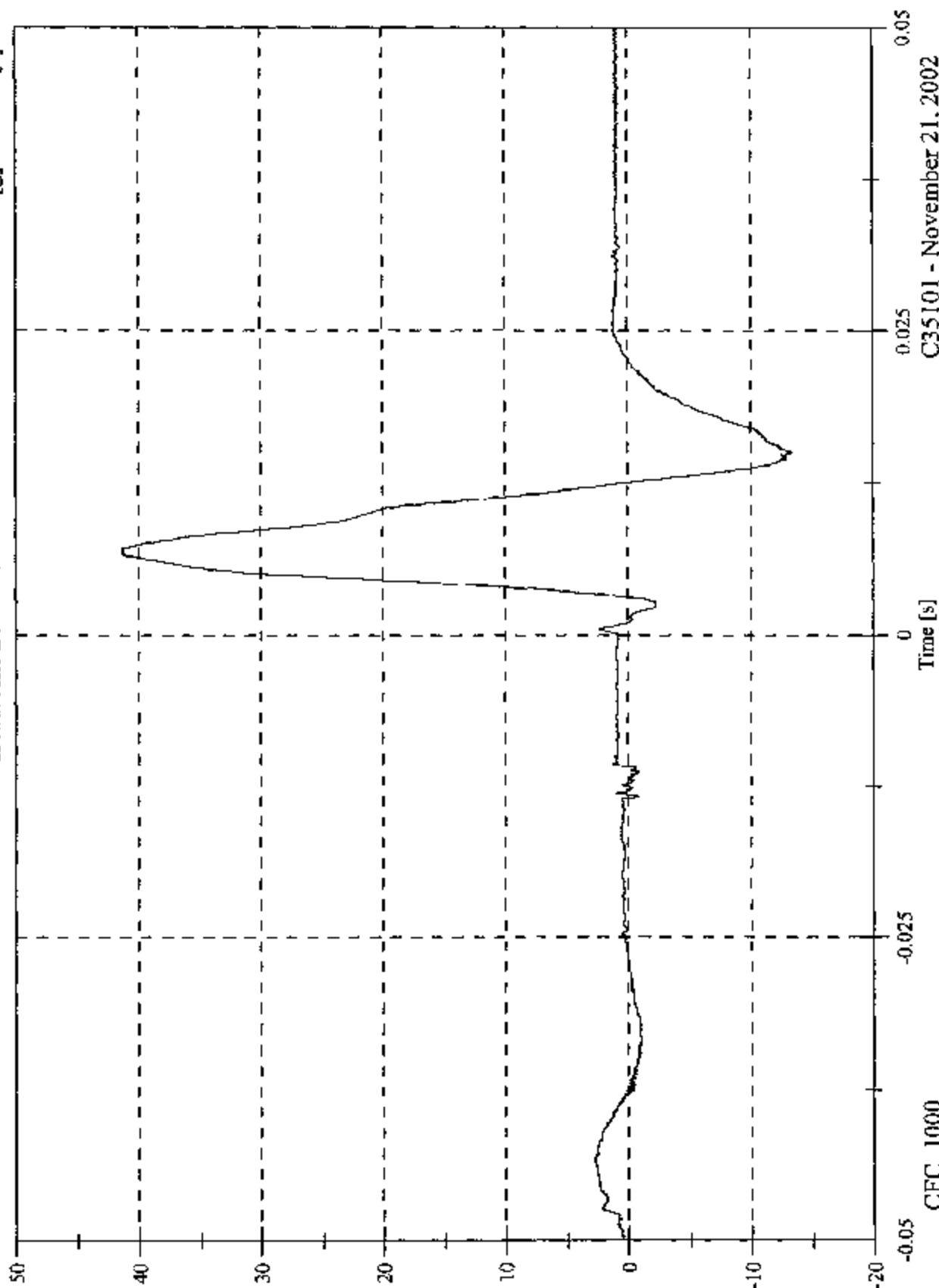
Time [s]

C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Z Acceleration

Max: 41.4 [g] at 0.007 [s]

Min: -13.3 [g] at 0.015 [s]



CFC_1000

Time [s]

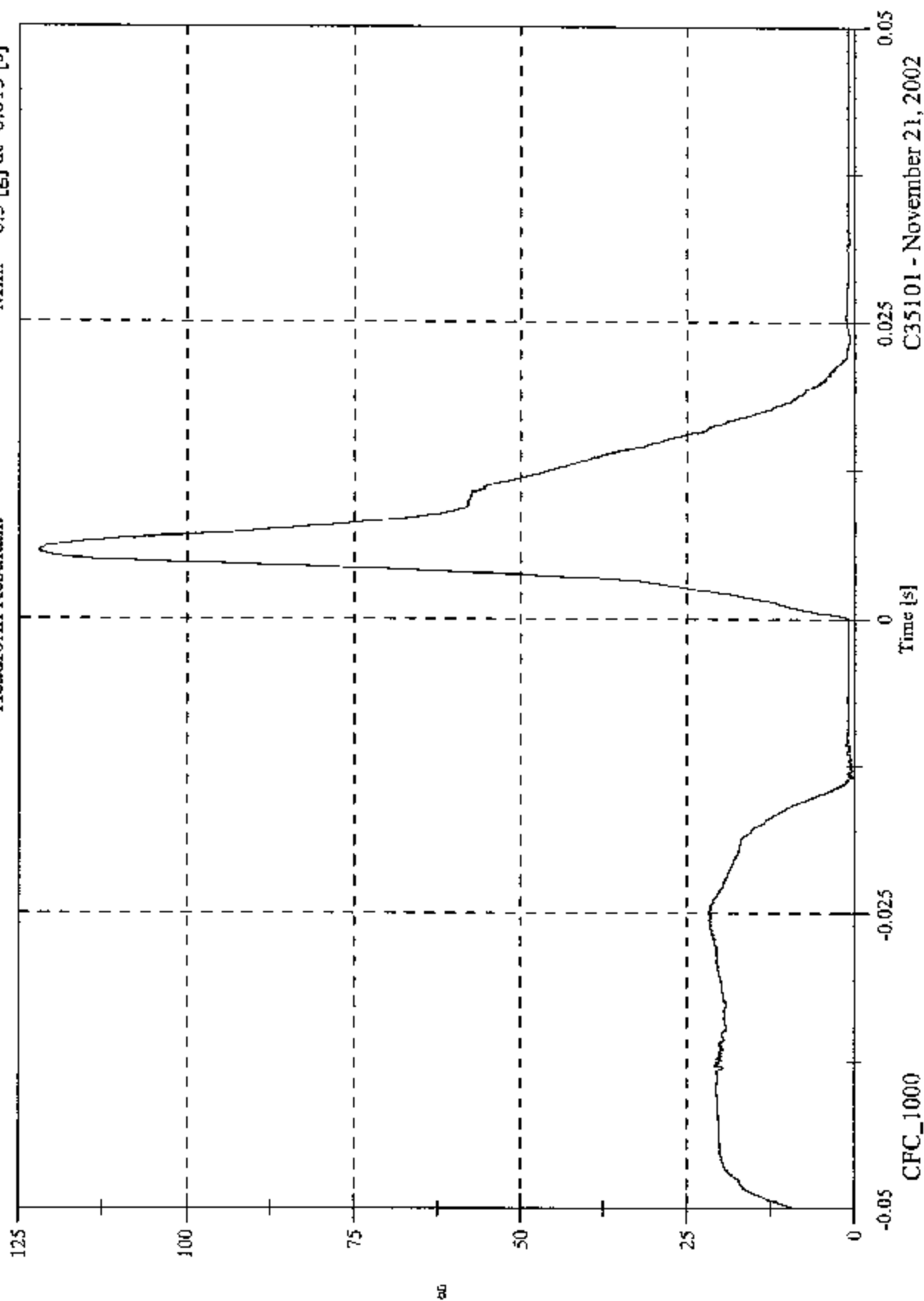
C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Resultant

Max: 122.0 [g] at 0.006 [s]

Min: 0.3 [g] at -0.013 [s]



CFC_1000

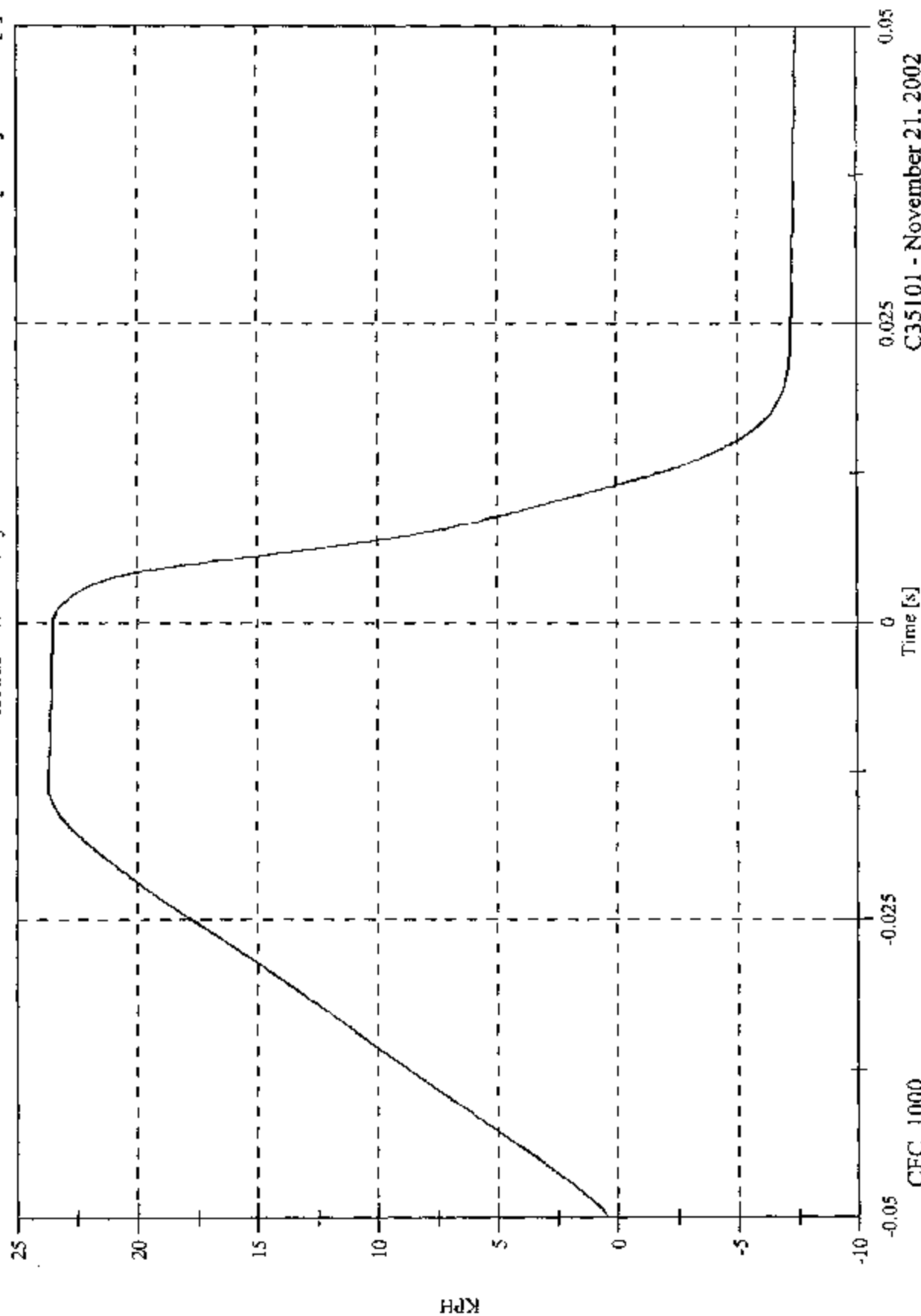
-0.025

Time [s]

0.025

C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Velocity
Max: 23.7 [KPH] at -0.013 [s]
Min: -7.4 [KPH] at 0.050 [s]

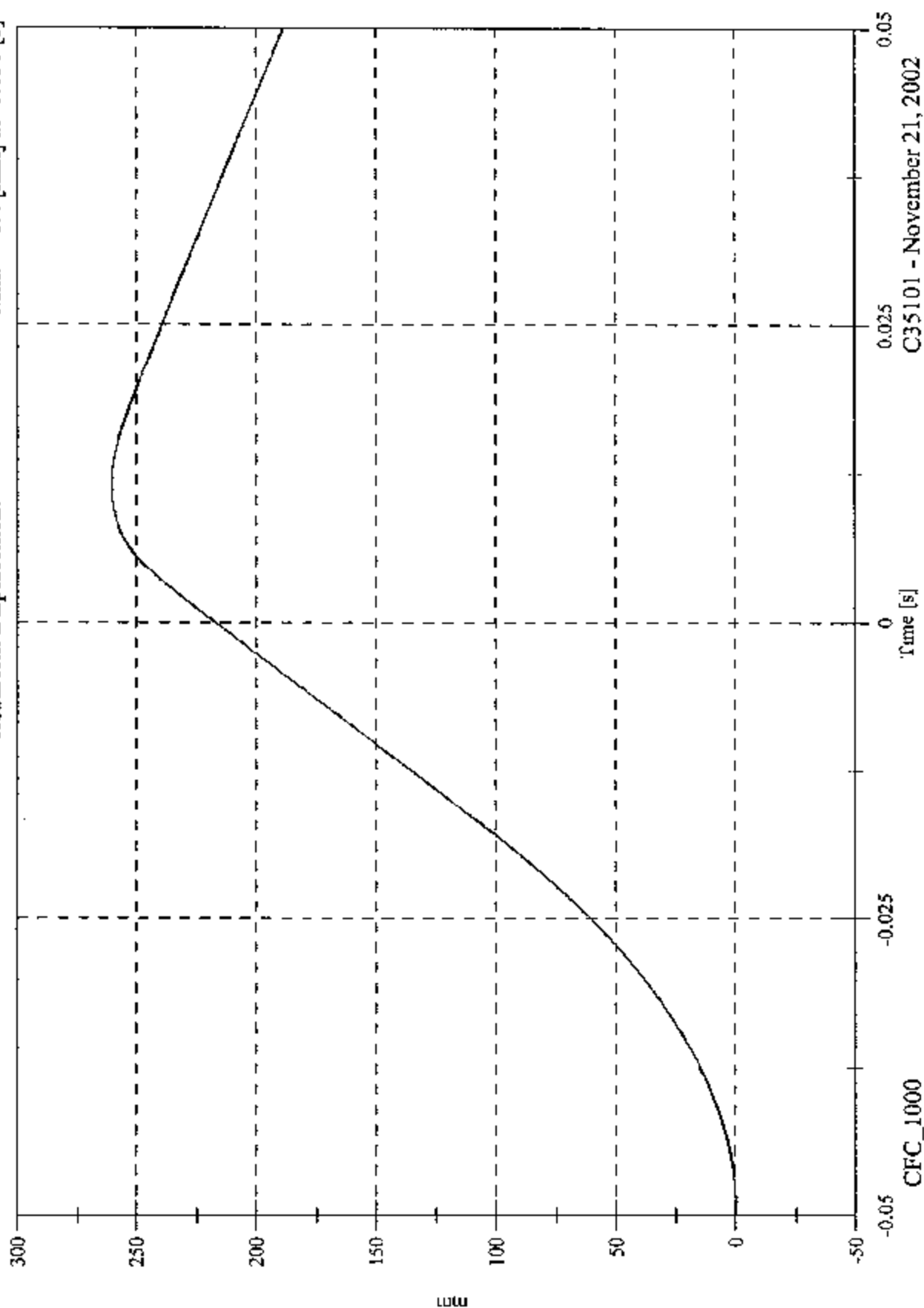


C35101 RPI IMPACT PLOT #5

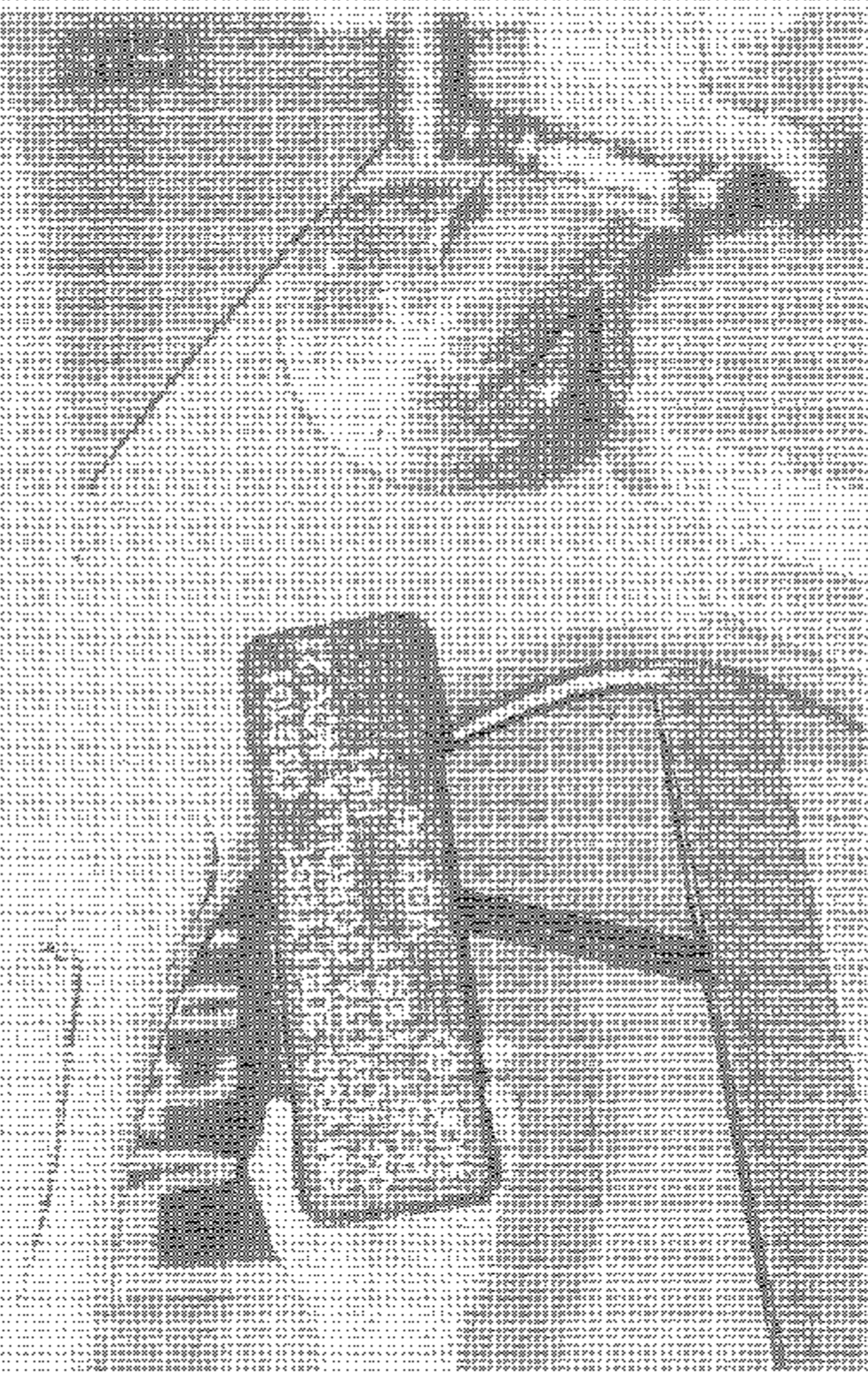
FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

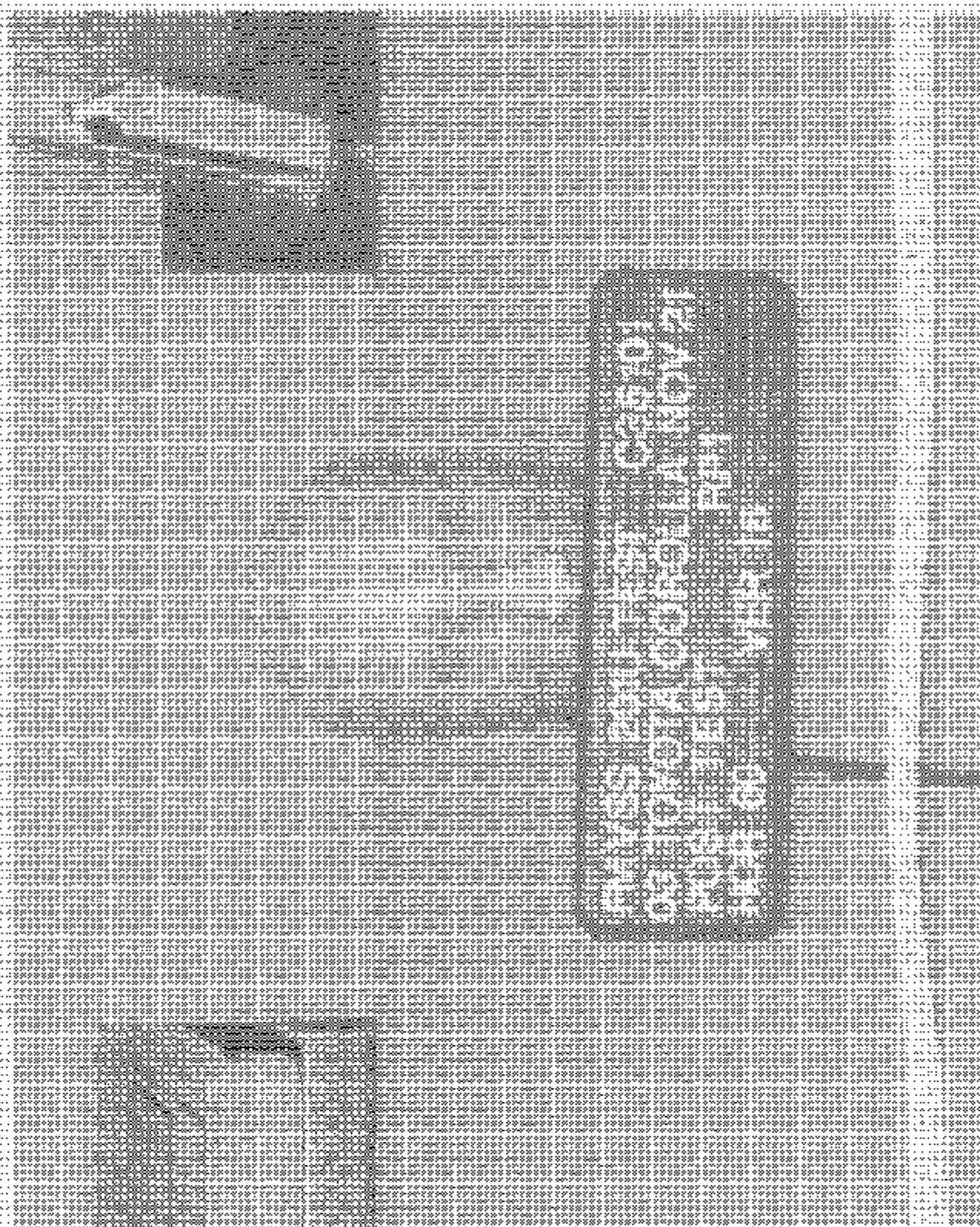
Max: 260.7 [mm] at 0.012 [s]
Min: -0.4 [mm] at -0.050 [s]

Headform Displacement



PLUSS 2004 TEST C33001
0310001ACONCHIA NOV 2
FIRE TEST EPI
1000 28 VER 12





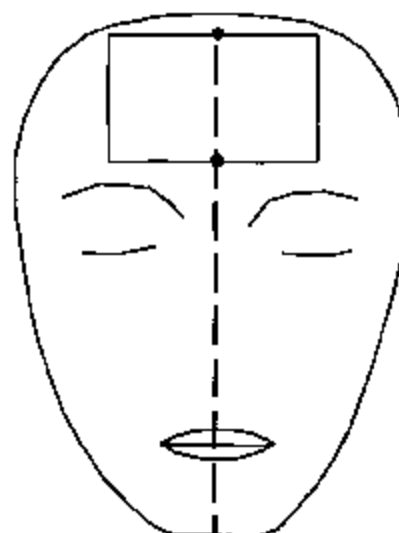
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 7T1BR32EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

Test Number: 4 Test Date: 11/21/02
 Target Location: PASSENGER SIDE B-PILLAR Target Code: BP3
 Horizontal Impact Angle: 88° Vertical Impact Angle: -8°
 Ambient Temperature: 22 °C Time of Impact: 13:15
 Headform Number: 805

Impact Point:

Description:

Description: From lower midpoint				
On centerline	24	mm up		
On centerline	19	x	mm right	- mm left



Free Motion HIC: 437.4 HIC(d): 496.4
 Impact Velocity (kph): 23.67 HIC1: 1.1 msec HIC2: 12.2 msec

Post-Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - BP3

FMH Headform 805

Location: BP3

Test Date: November 21, 2002

Work File: BP3

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 496.4

Lab Humidity: 20 %

HIC (36ms): 437.4

Velocity at Impact: 23.67 KPH

t1: 1.1 msec

t2: 12.2 msec

Free Flight Distance: 220.93 mm

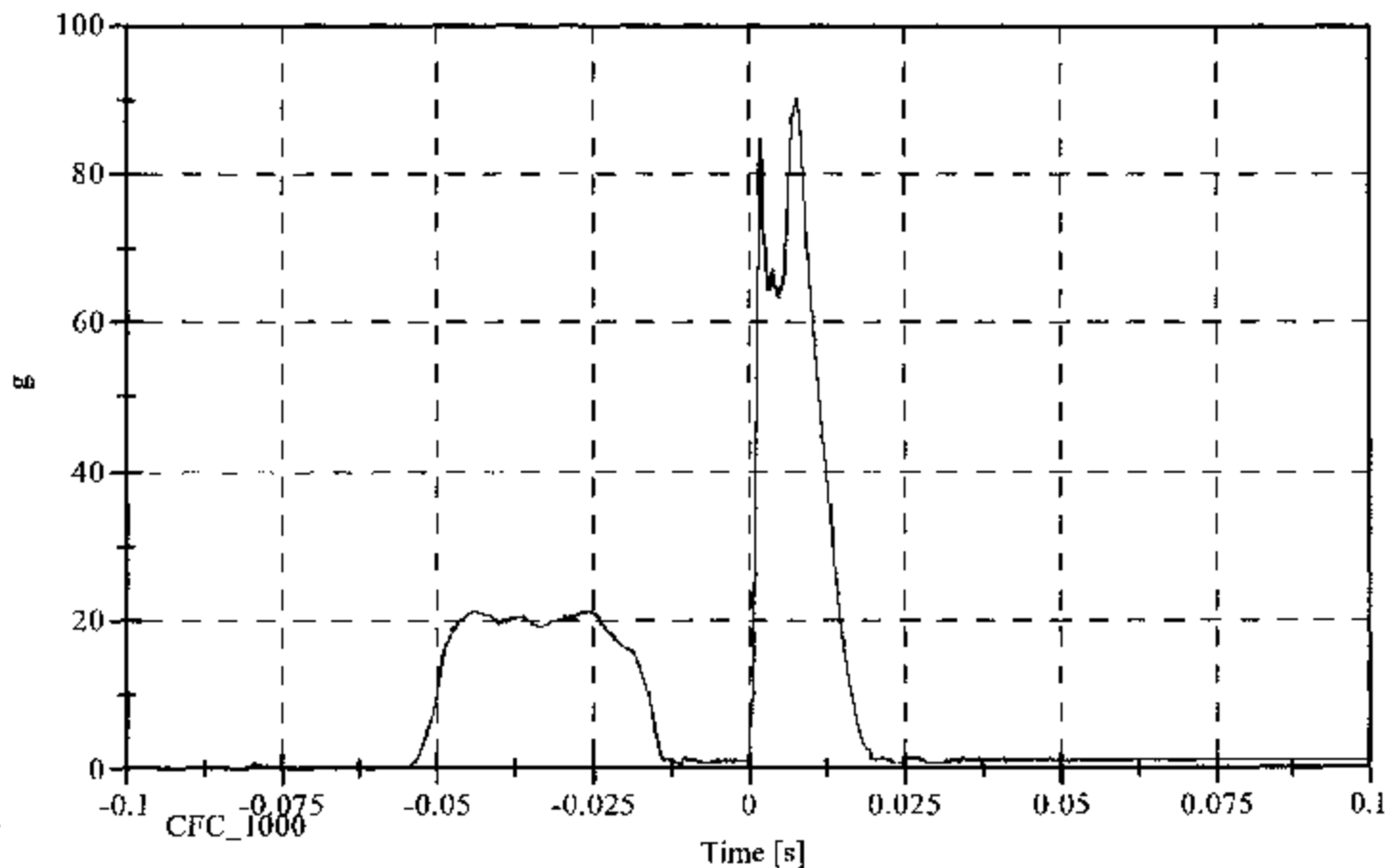
Duration: 11.1 msec

Average Acceleration: 8.4 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 90.2 [g] at 0.008 [s]

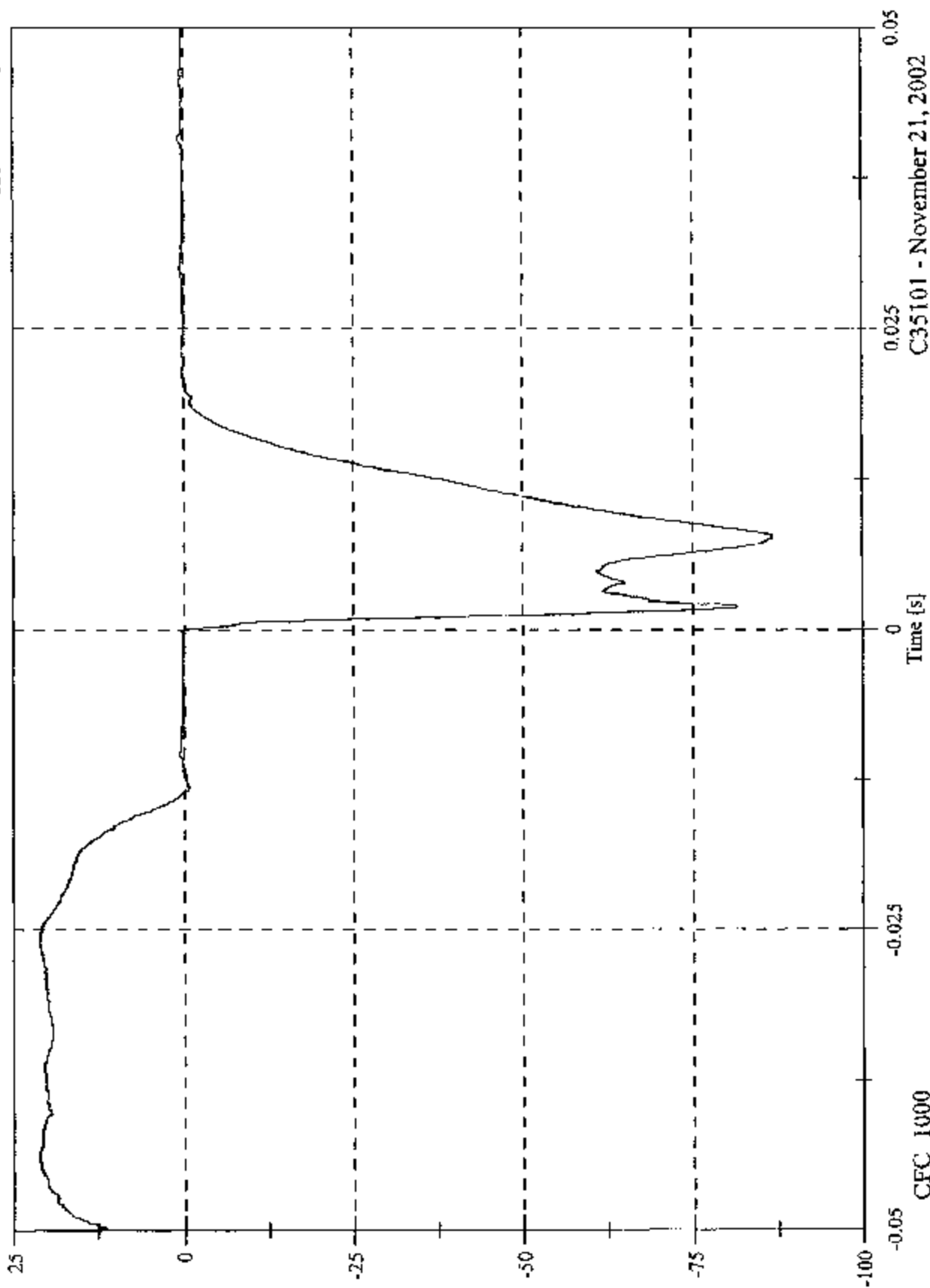
Min: 0.0 [g] at -0.085 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform X Acceleration

Max: 21.2 [g] at -0.044 [s]
Min: -86.9 [g] at 0.008 [s]



CFC_1000

Time [s]

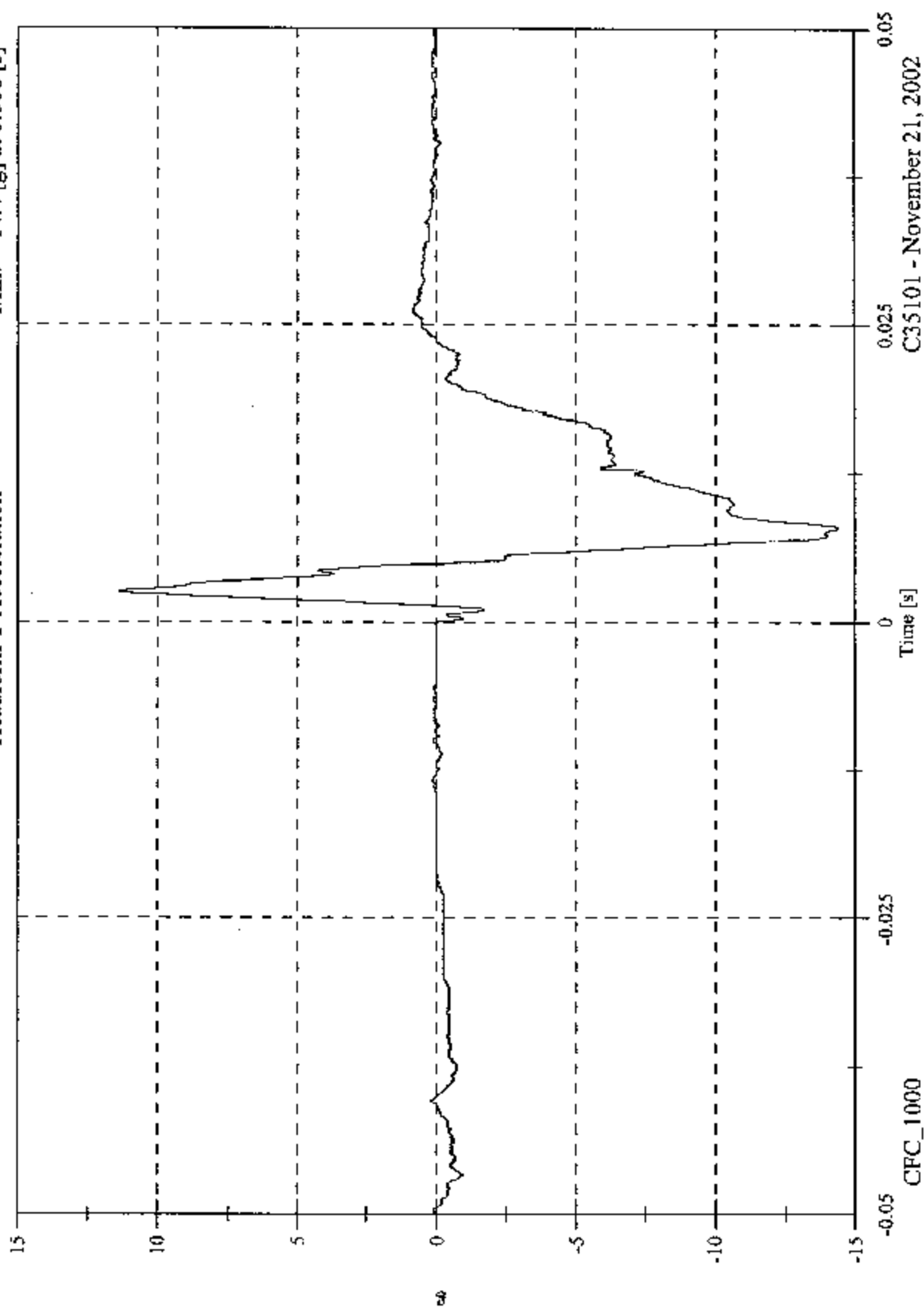
C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Y Acceleration

Max: 11.3 [g] at 0.003 [s]

Min: -14.4 [g] at 0.008 [s]



Time [s]

CFC_1000

-0.025

-0.05

0

0.025

0.05

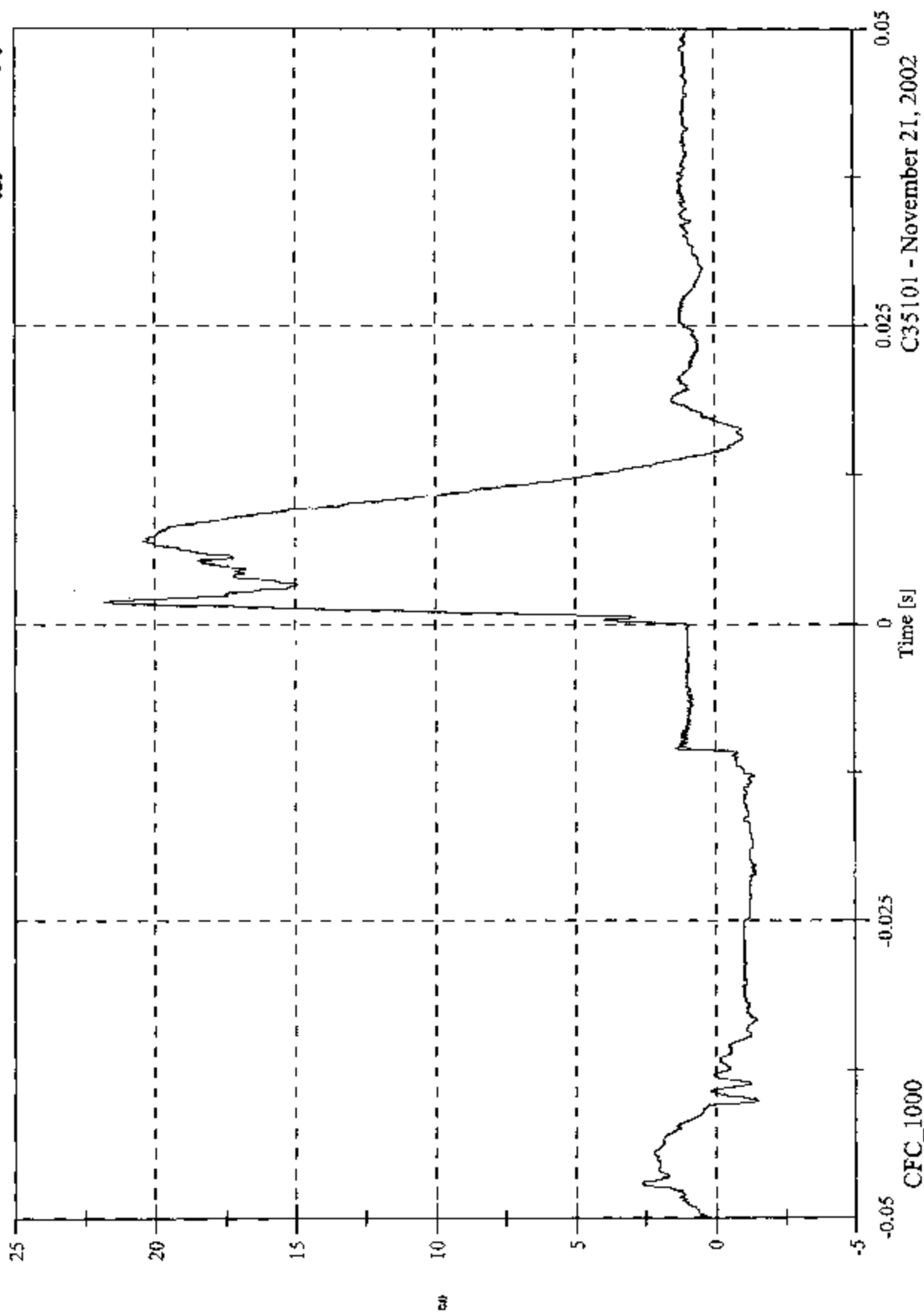
C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Max: 21.8 [g] at 0.002 [s]

Min: -1.5 [g] at -0.040 [s]

Headform Z Acceleration

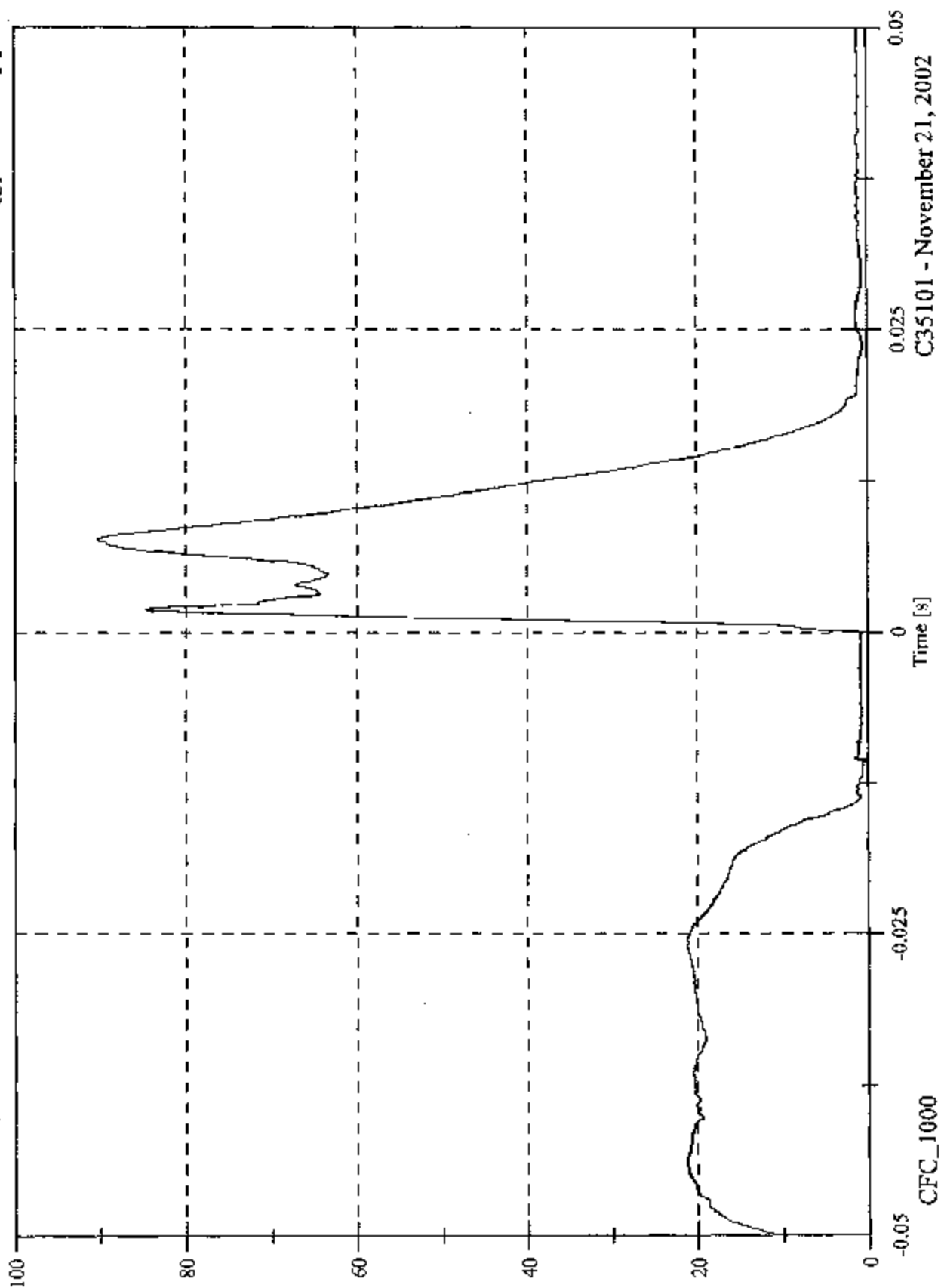


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Resultant

Max: 90.2 [g] at 0.008 [s]

Min: 0.2 [g] at -0.011 [s]



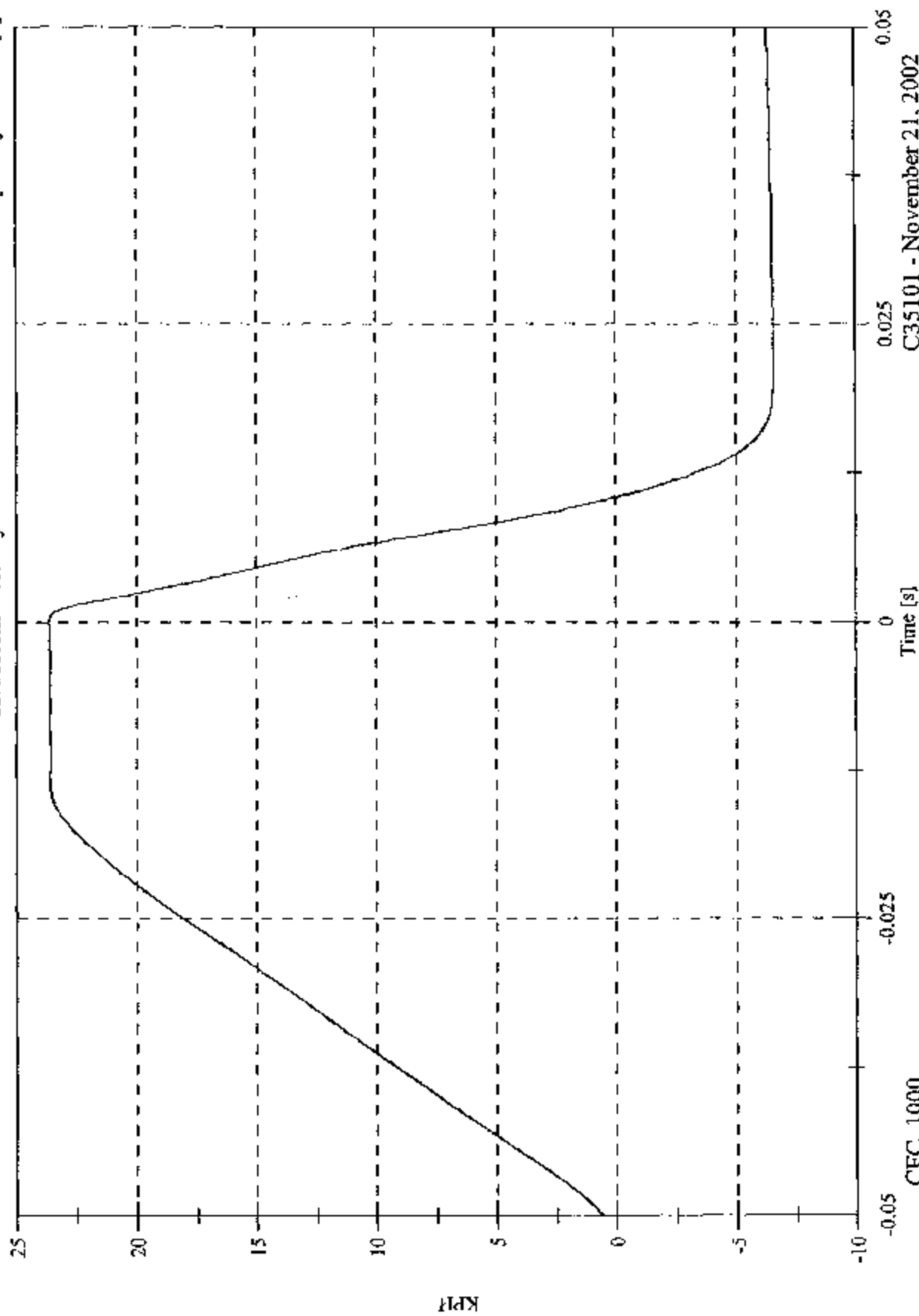
C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Max: 23.7 [KPH] at 0.000 [s]

Min: -6.5 [KPH] at 0.021 [s]

Headform Velocity

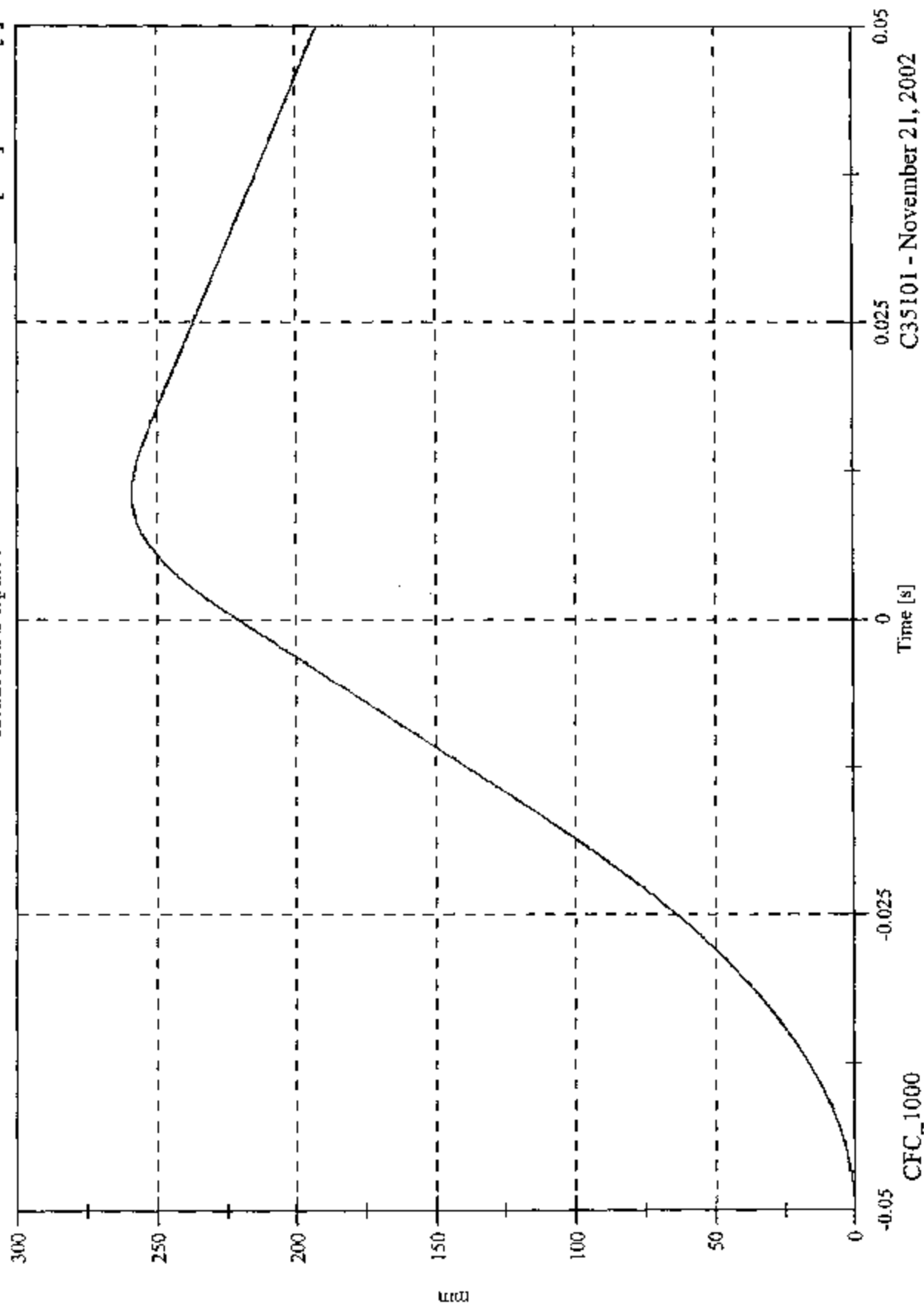


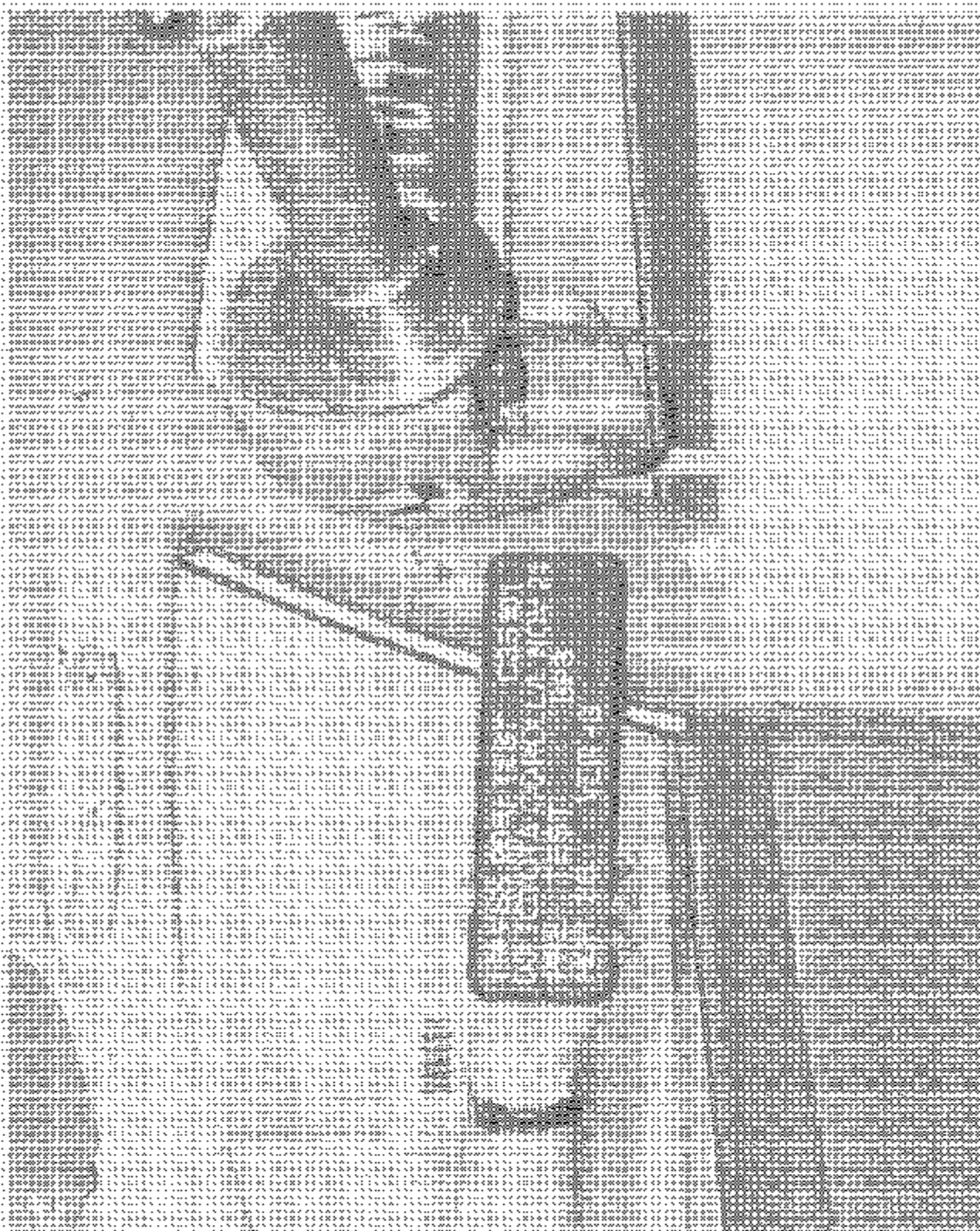
C35101 - November 21, 2002

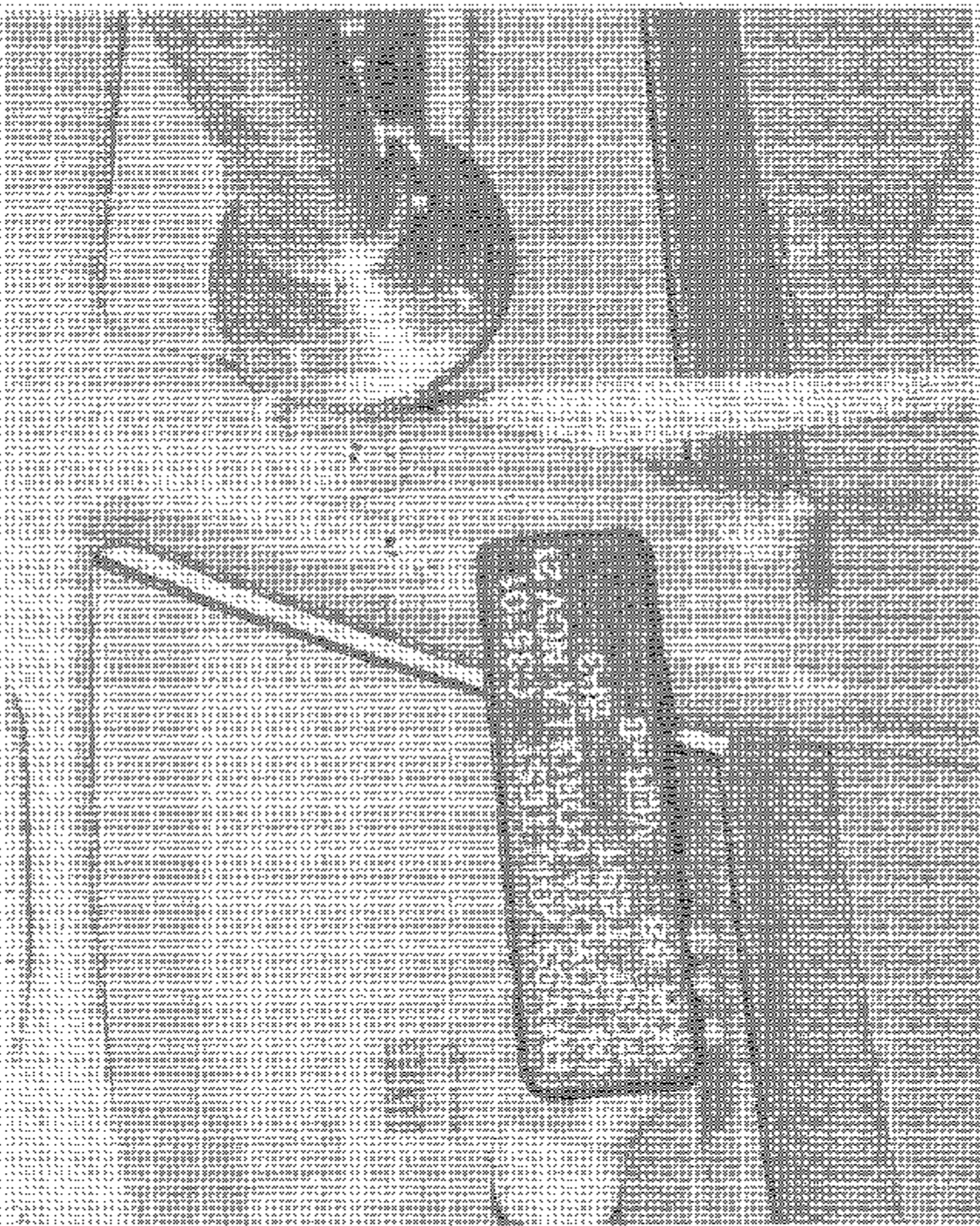
FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

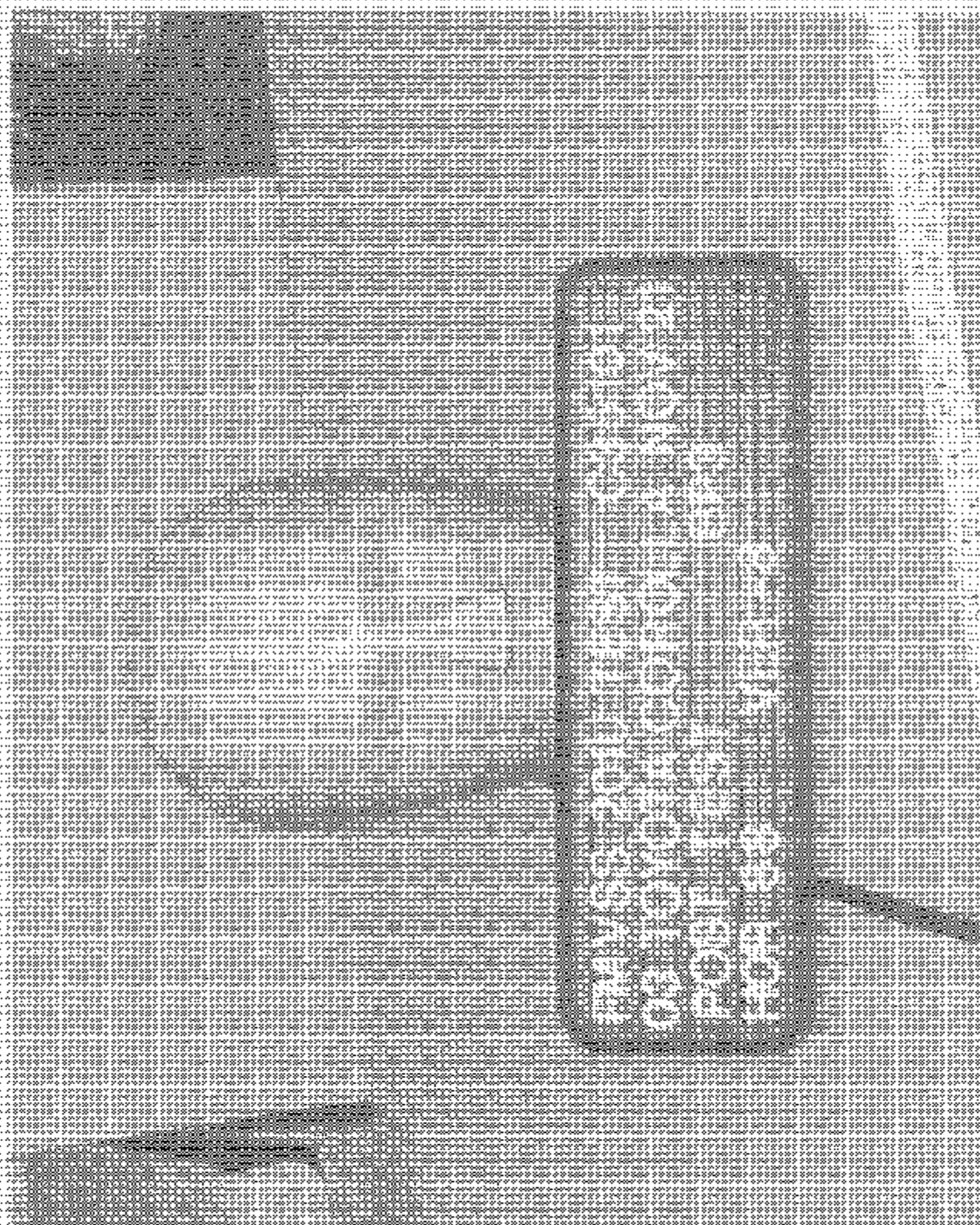
Headform Displacement

Max: 259.0 [mm] at 0.010 [s]
Min: 0.2 [mm] at -0.050 [s]









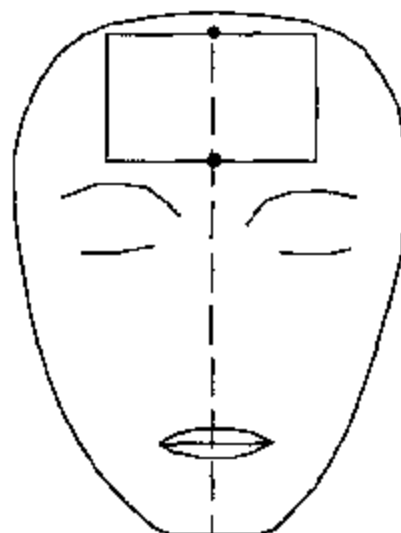
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR37EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sep., 02

Test Number: 5 Test Date: 11/21/02
 Target Location: PASSENGER SIDE SIDE RAIL Target Code: SR2A
 Horizontal Impact Angle: 90° Vertical Impact Angle: 10°
 Ambient Temperature: 22 °C Time of Impact: 13:55
 Headform Number: 0062

Impact Point:

Description:

Description:	From lower midpoint			
On centerline	7	mm up		
On centerline	33	-	mm right	x mm left



Free Motion HIC: 275.2 HIC(d): 374.1
 Impact Velocity (kph): 23.58 HIC1: 1.1 msec HIC2: 10.0 msec

Post-Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - SR2

FMH Headform 0062

Location: SR2A

Test Date: November 21, 2002

Work File: SR2A

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 374.1

Lab Humidity: 20 %

HIC (36ms): 275.2

Velocity at Impact: 23.58 KPH

t1: 1.1 msec

t2: 10.0 msec

Free Flight Distance: 211.10 mm

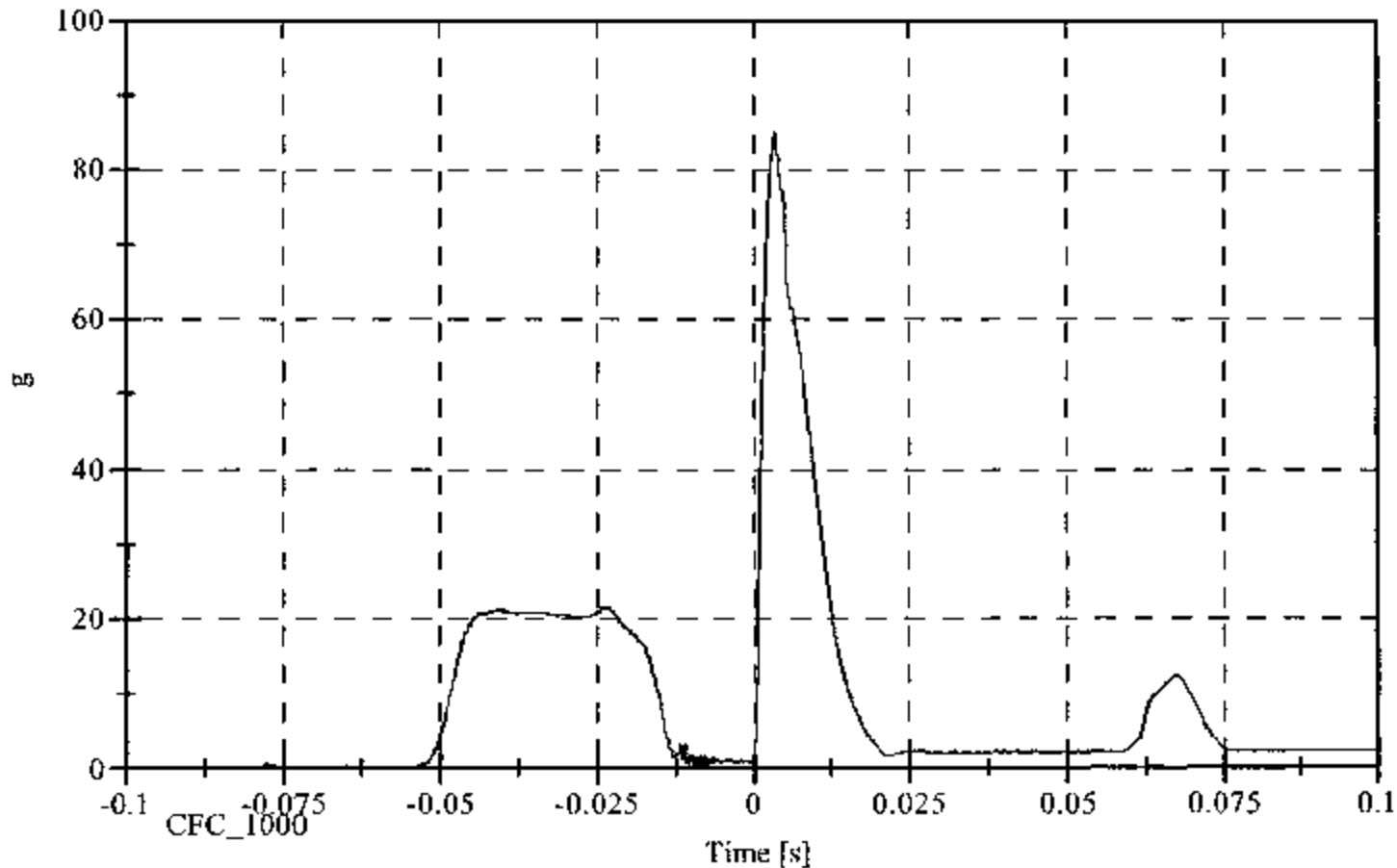
Duration: 8.9 msec

Average Acceleration: 8.4 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 85.2 [g] at 0.003 [s]

Min: 0.0 [g] at -0.099 [s]

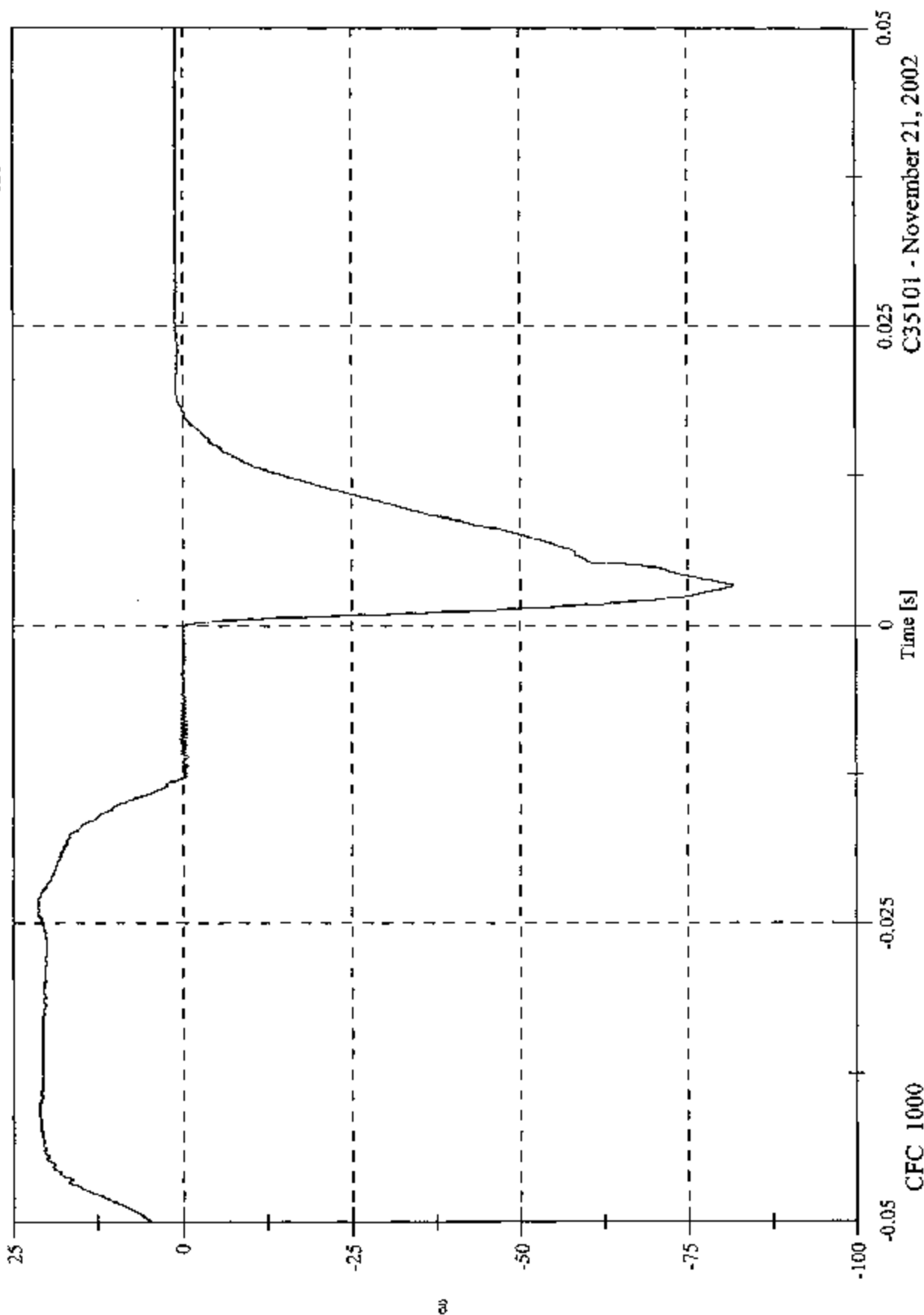


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform X Acceleration

Max: 21.5 [g] at -0.023 [s]

Min: -81.7 [g] at 0.003 [s]



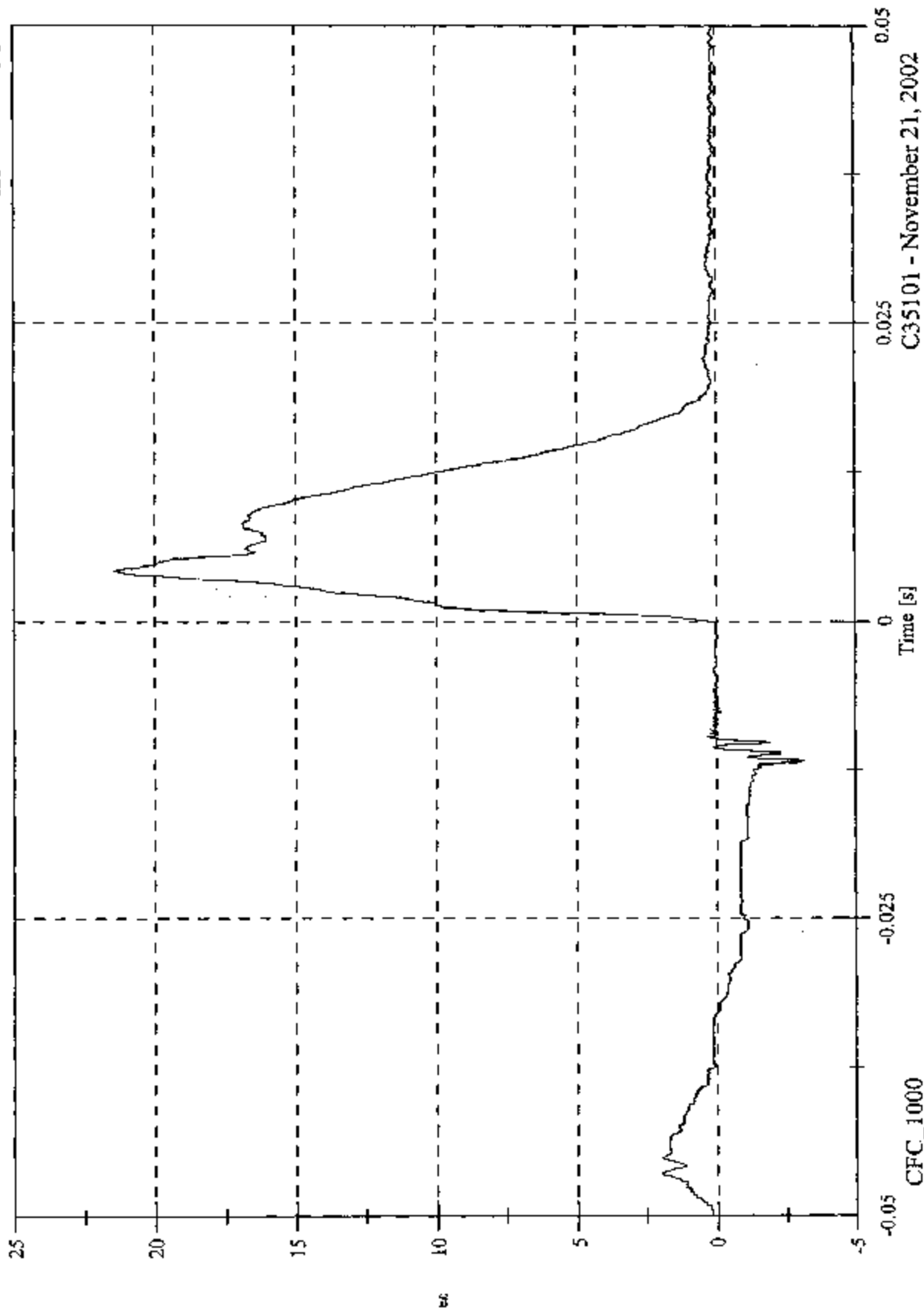
C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Y Acceleration

Max: 21.4 [g] at 0.004 [s]

Min: -3.1 [g] at -0.012 [s]

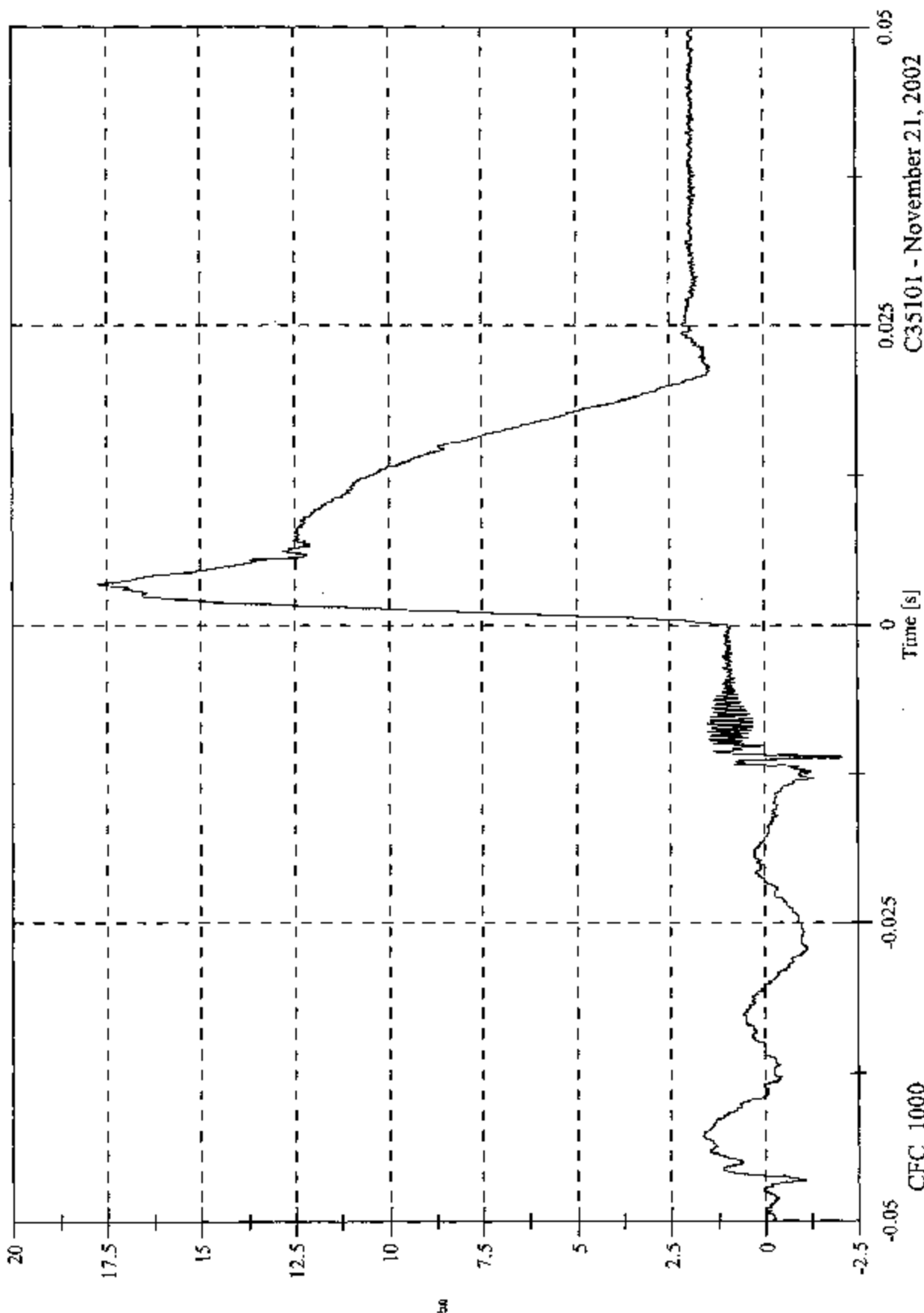


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Z Acceleration

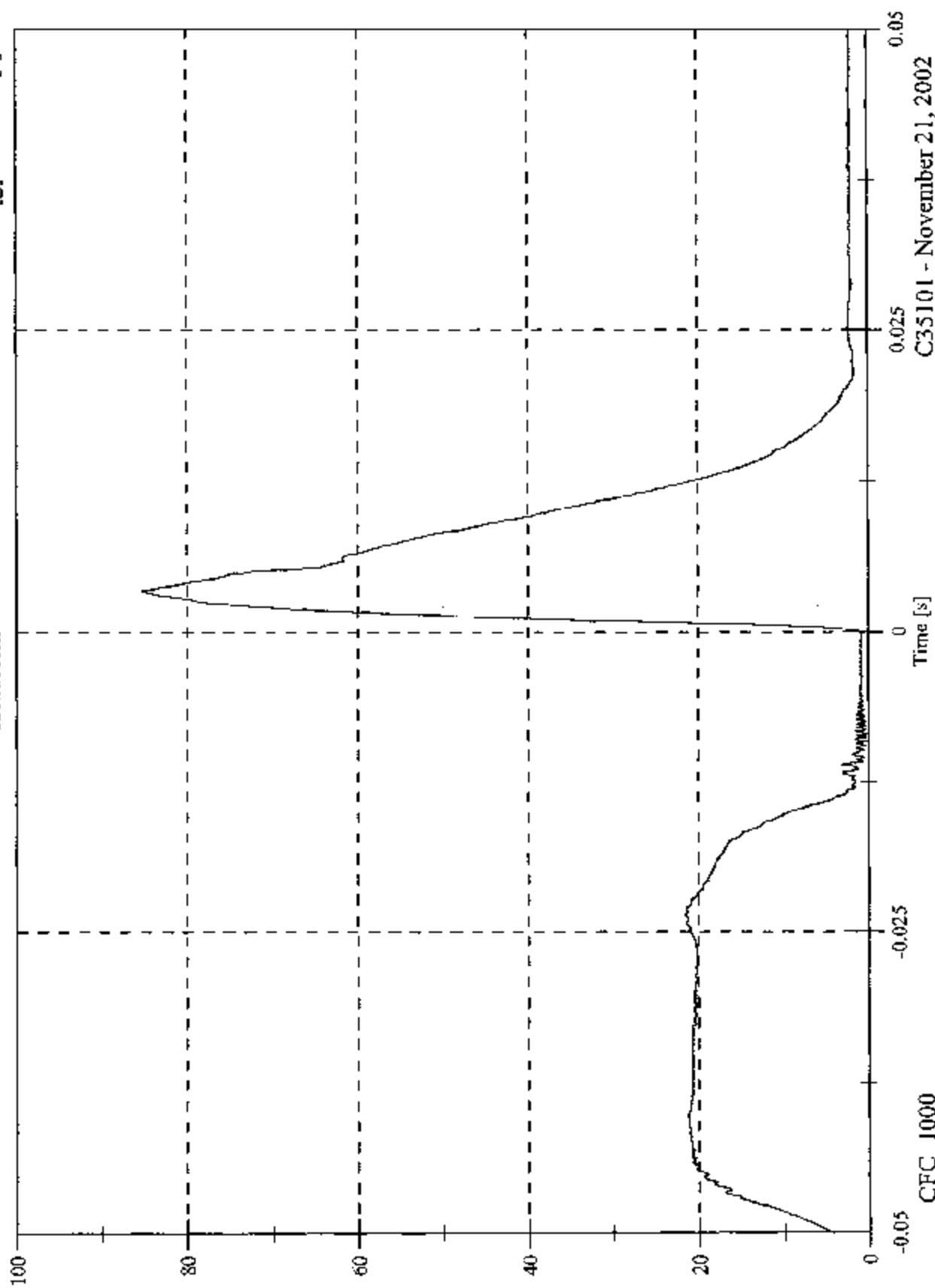
Max: 17.7 [g] at 0.003 [s]

Min: -2.1 [g] at -0.011 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 85.2 [g] at 0.003 [s]
Min: 0.3 [g] at -0.008 [s]

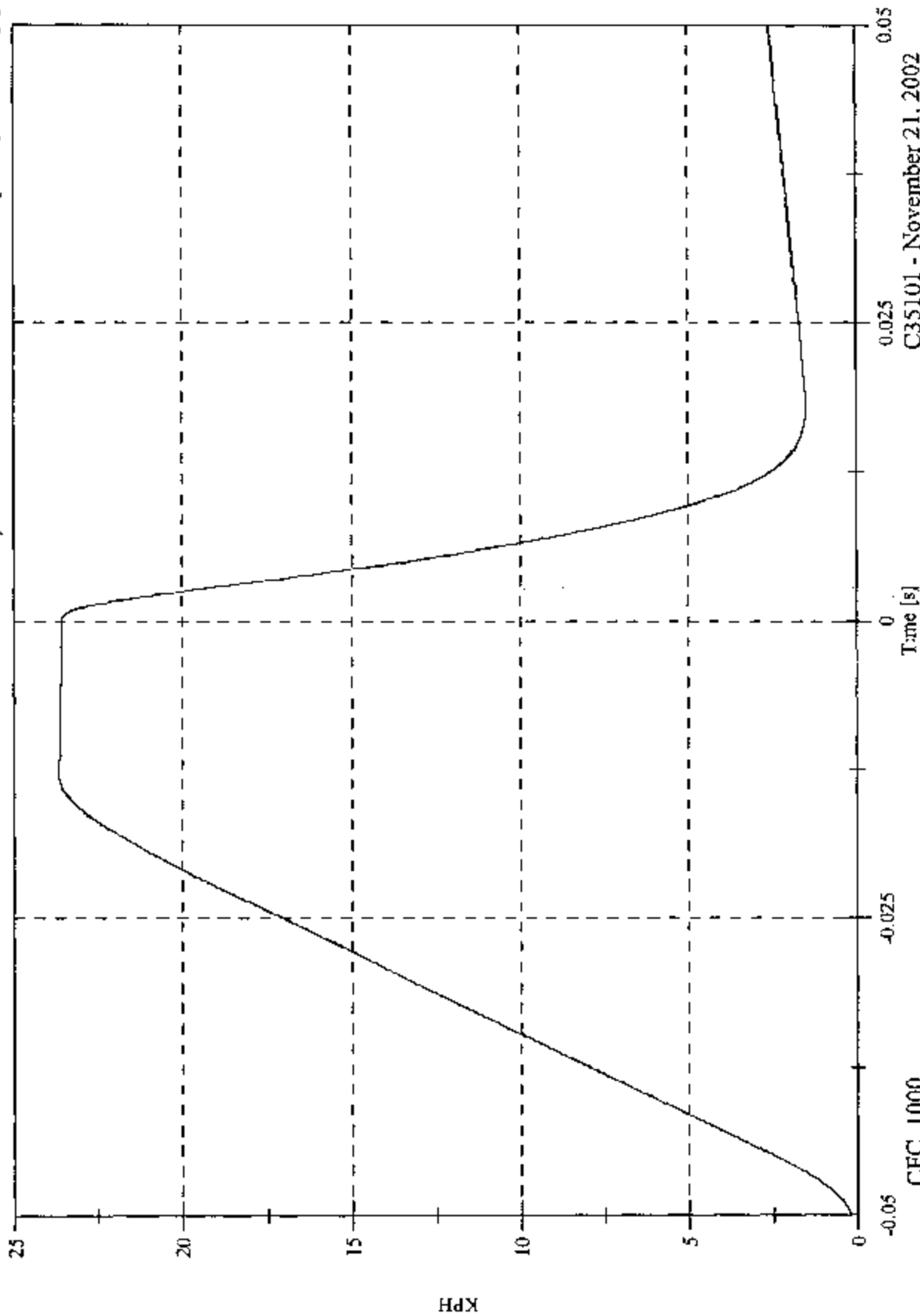


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Max: 23.7 [KPH] at -0.013 [s]

Min: 0.2 [KPH] at -0.050 [s]

Headform Velocity

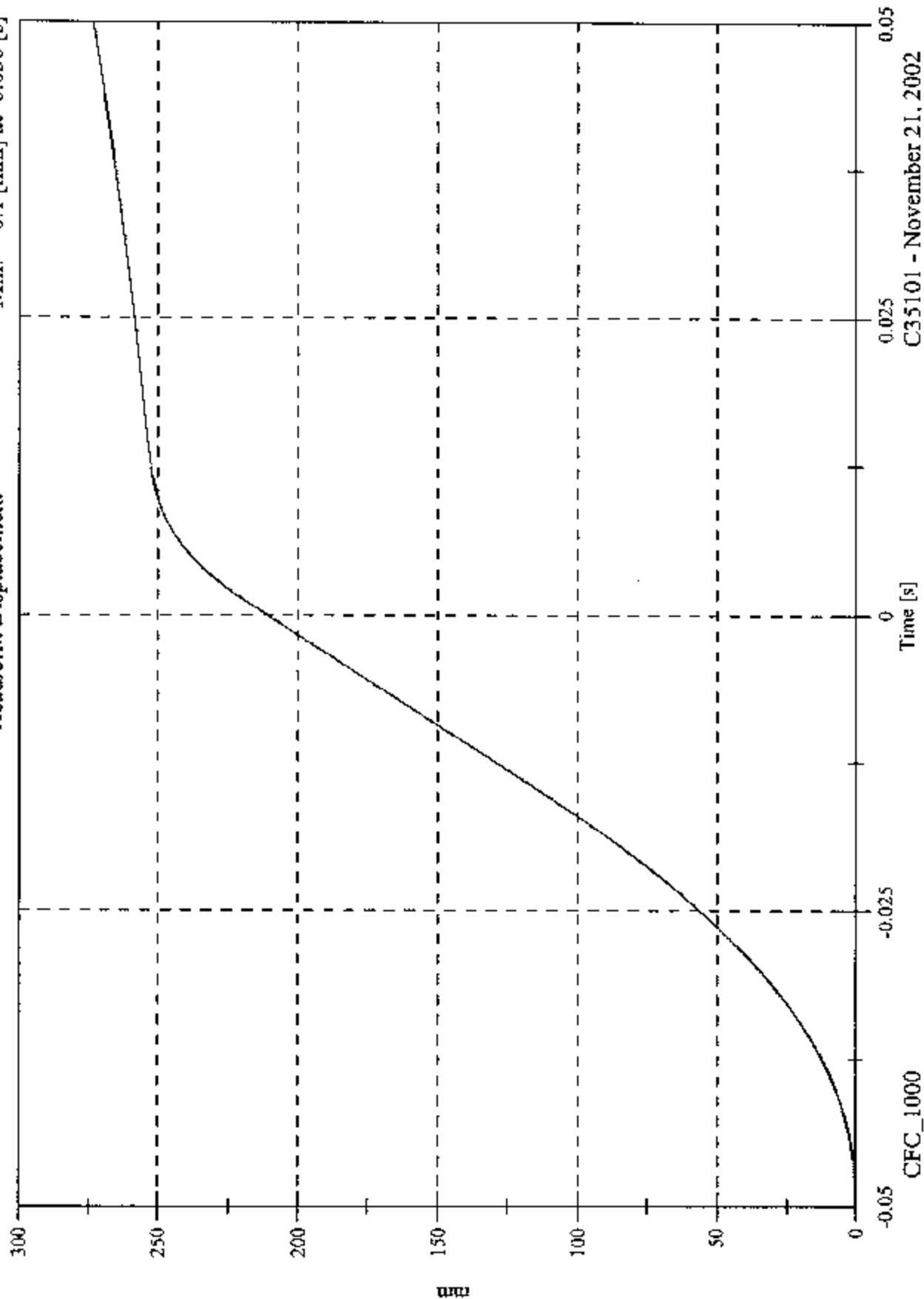


C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Displacement

Max: 273.6 [mm] at 0.050 [s]

Min: 0.1 [mm] at -0.050 [s]

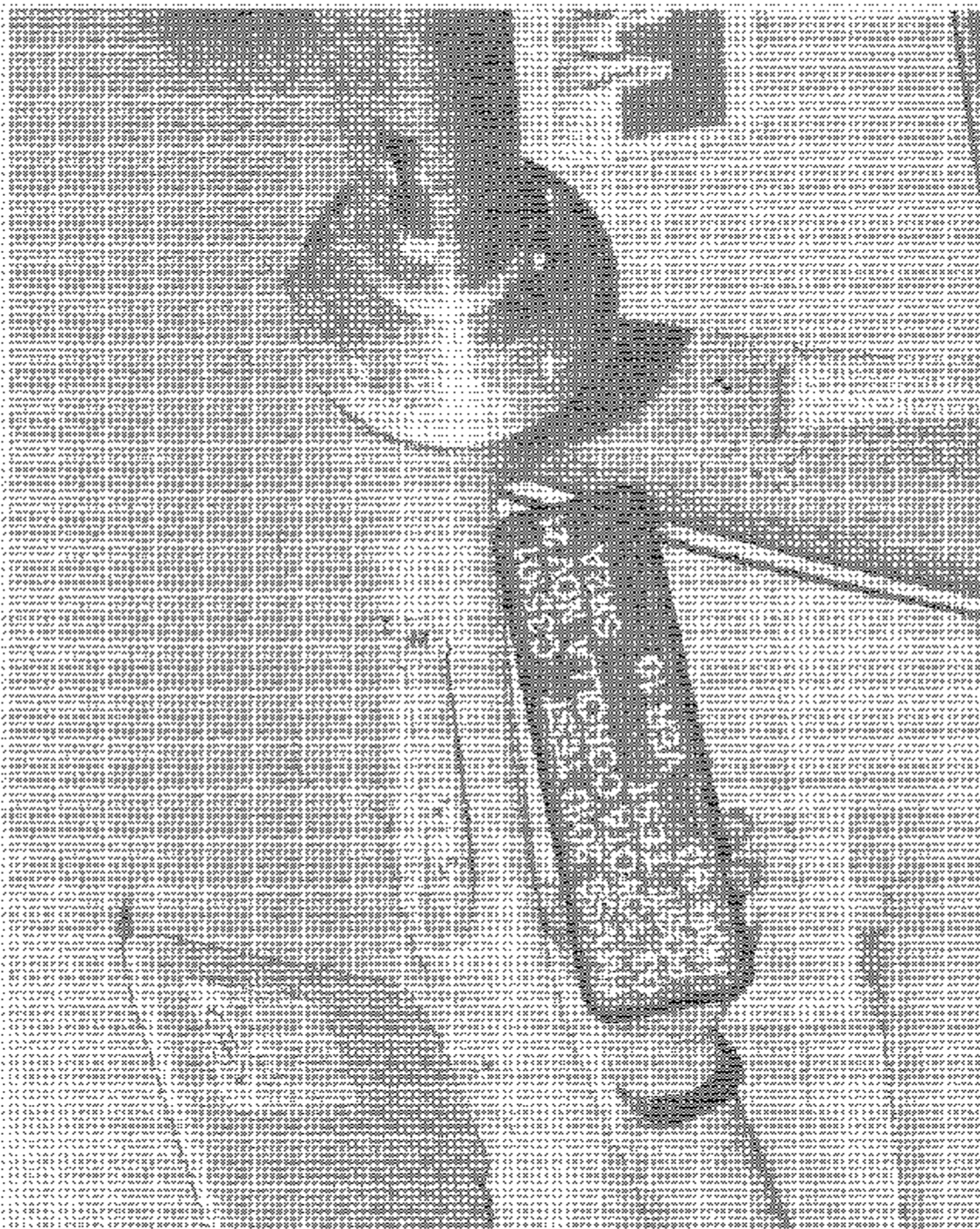


CFC_1000

Time [s]

C35101 - November 21, 2002





TRUCKS - 4000 TEEB1 C4500
CA TOYOTA CORP. A NOV 21
MOBILE 1201 SHUA
1007 20 1007 18

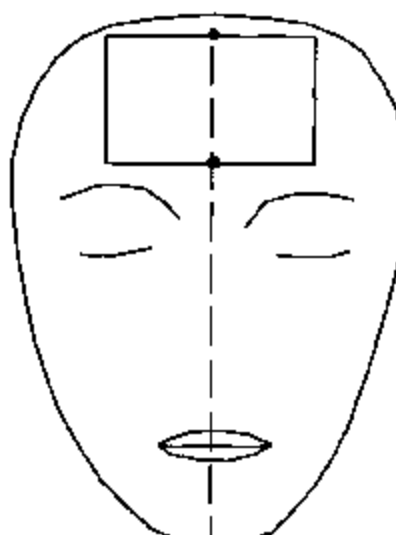
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1H3R32EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

Test Number: 6 Test Date: 11/21/02
 Target Location: PASSENGER SIDE B-PILLAR Target Code: BPI
 Horizontal Impact Angle: 90° Vertical Impact Angle: 12°
 Ambient Temperature: 22 °C Time of Impact: 14:30
 Headform Number: 0355

Impact Point:

Description:

Description:	From lower midpoint				
On centerline	46	mm up			
On centerline	7	-	mm right	x	mm left



Free Motion HIC: 588.8 HIC(d): 610.6
 Impact Velocity (kph): 23.56 HIC1: 1.8 msec HIC2: 9.7 msec

Post Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - BP1

FMH Headform 0355

Location: BP1

Test Date: November 21, 2002

Work File: BP1

TEST RESULTS

Lab Temperature: 22 C

HICd: 610.6

Lab Humidity: 20 %

HIC (36ms): 588.8

Velocity at Impact: 23.56 KPH

t1: 1.8 msec

t2: 9.7 msec

Free Flight Distance: 224.87 mm

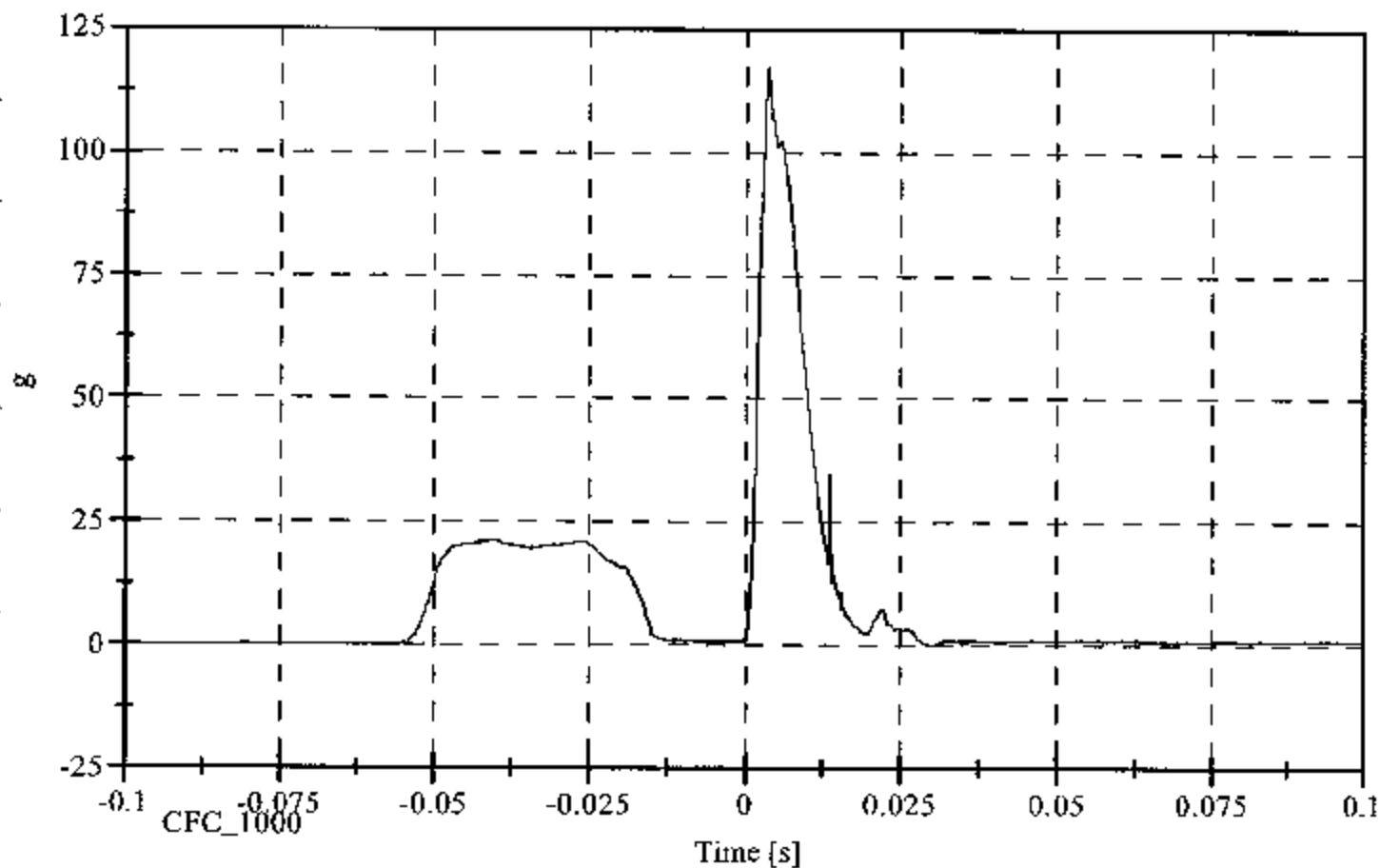
Duration: 7.9 msec

Average Acceleration: 8.5 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 117.4 [g] at 0.004 [s]

Min: -0.0 [g] at -0.099 [s]

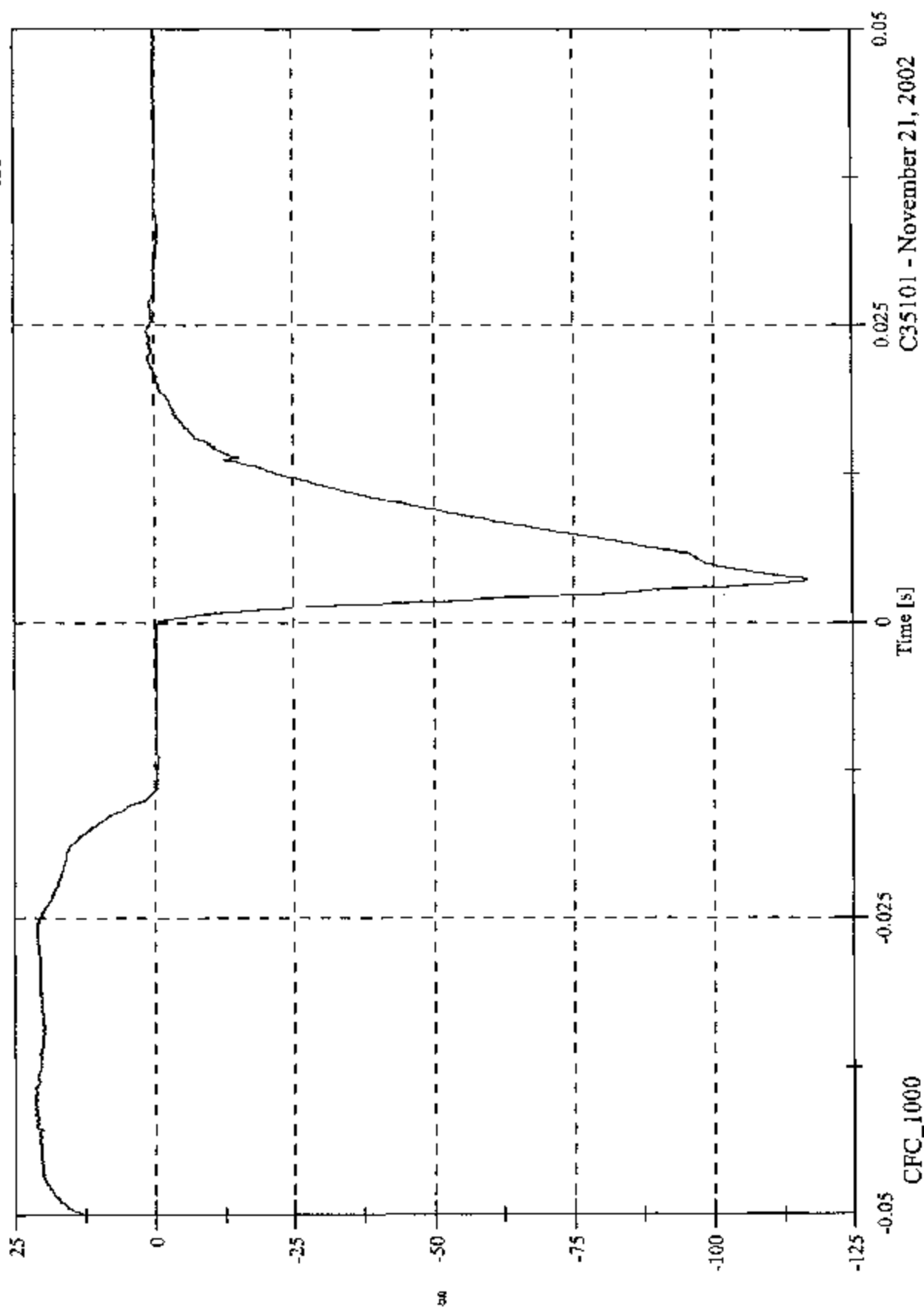


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform X Acceleration

Max: 21.6 [g] at -0.040 [s]

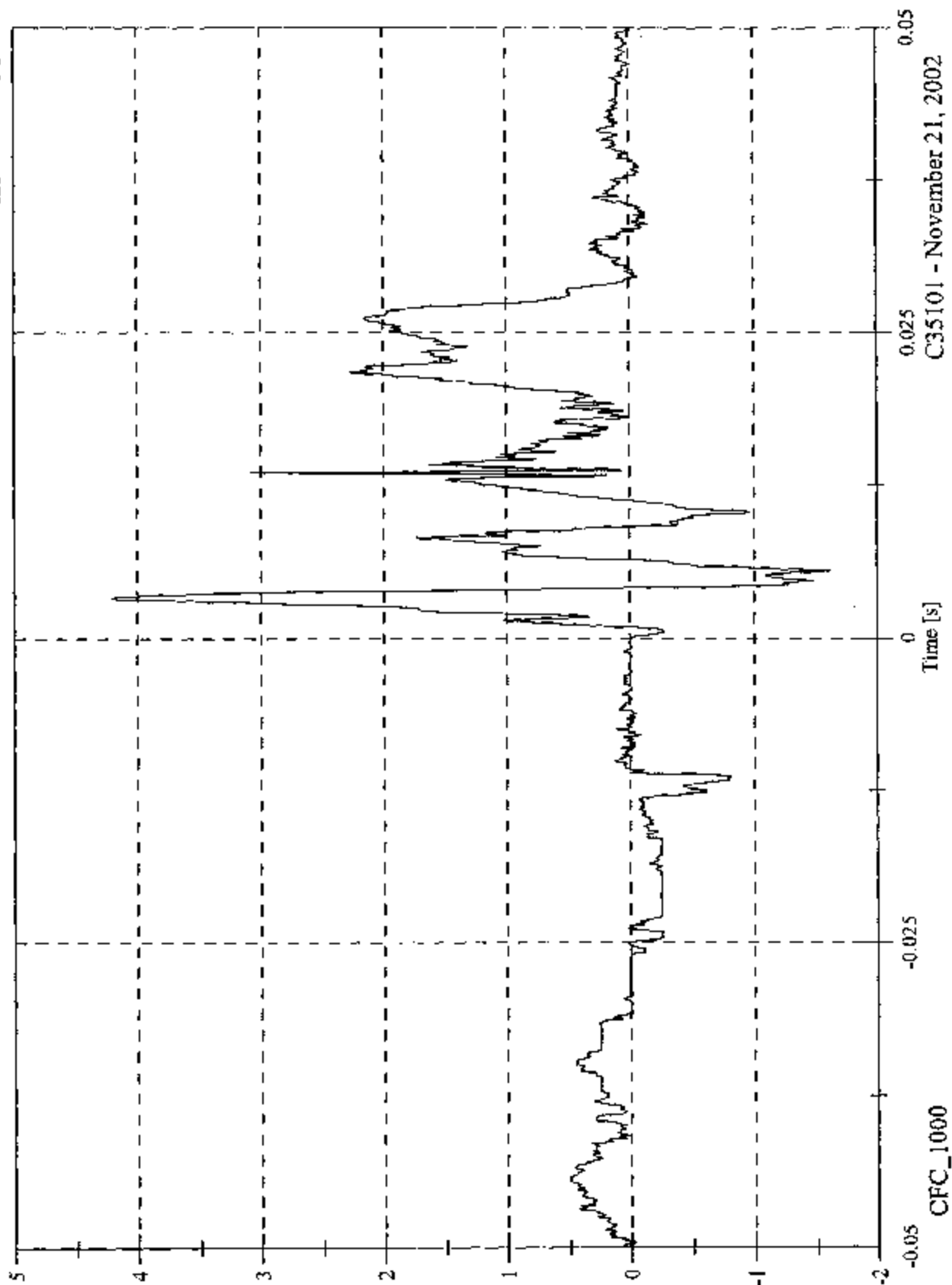
Min: -116.7 [g] at 0.004 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Max: 4.2 [g] at 0.003 [s]
Min: -1.6 [g] at 0.006 [s]

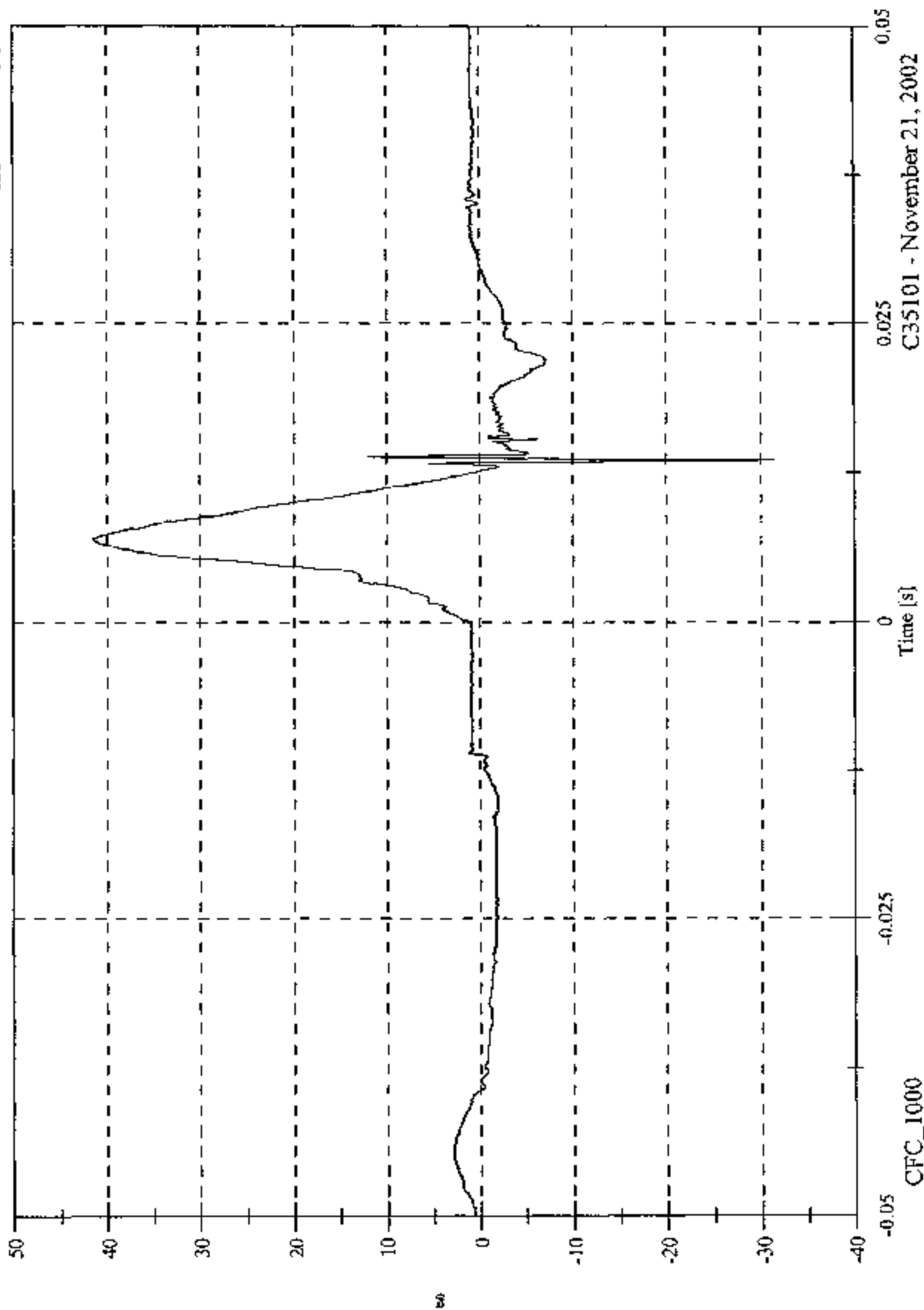
Headform Y Acceleration



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Z Acceleration

Max: 41.5 [g] at 0.007 [s]
Min: -31.5 [g] at 0.014 [s]



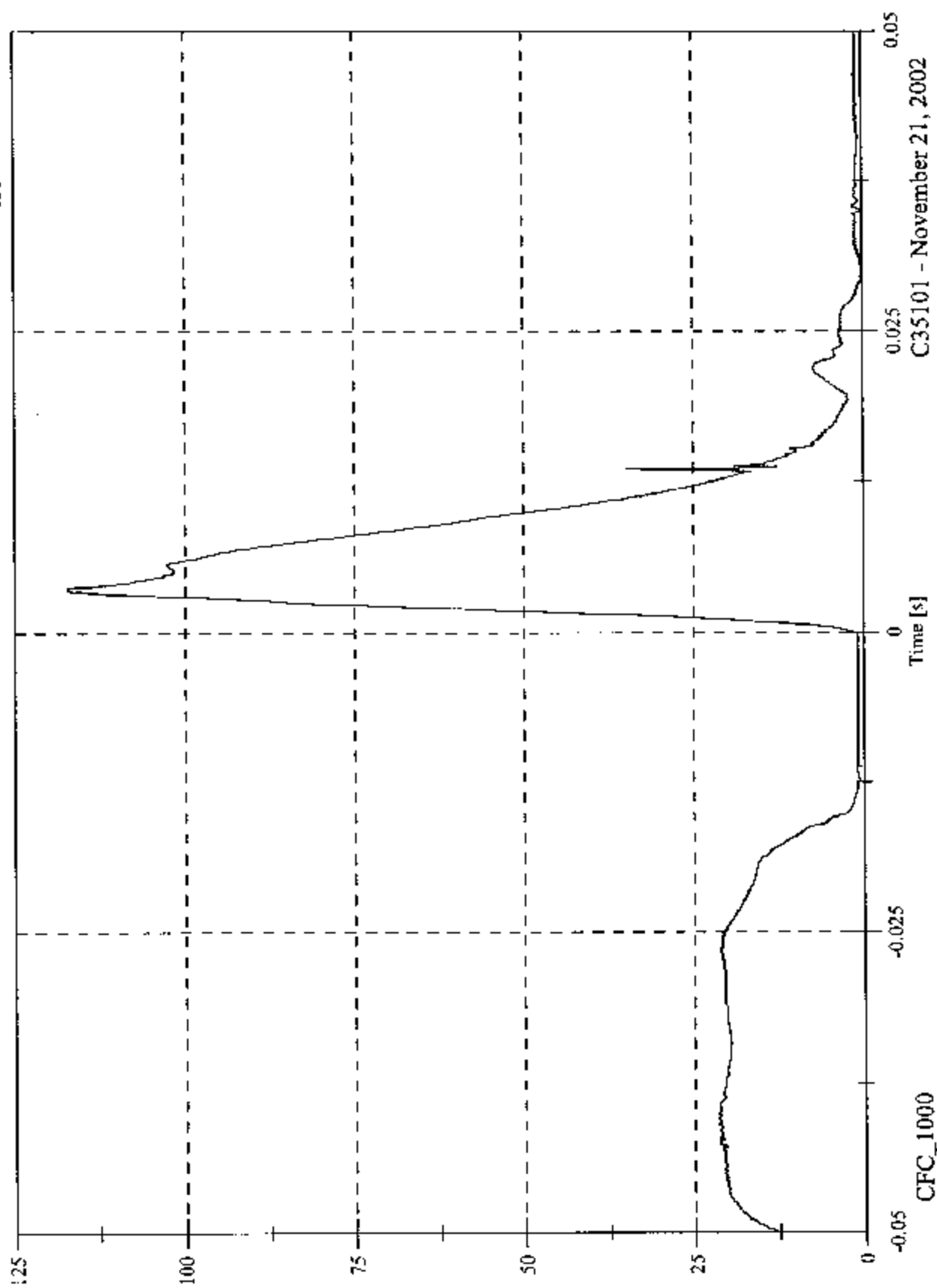
CFC_1000

Time [s]

C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 117.4 [g] at 0.004 [s]
Min: 0.0 [g] at 0.030 [s]

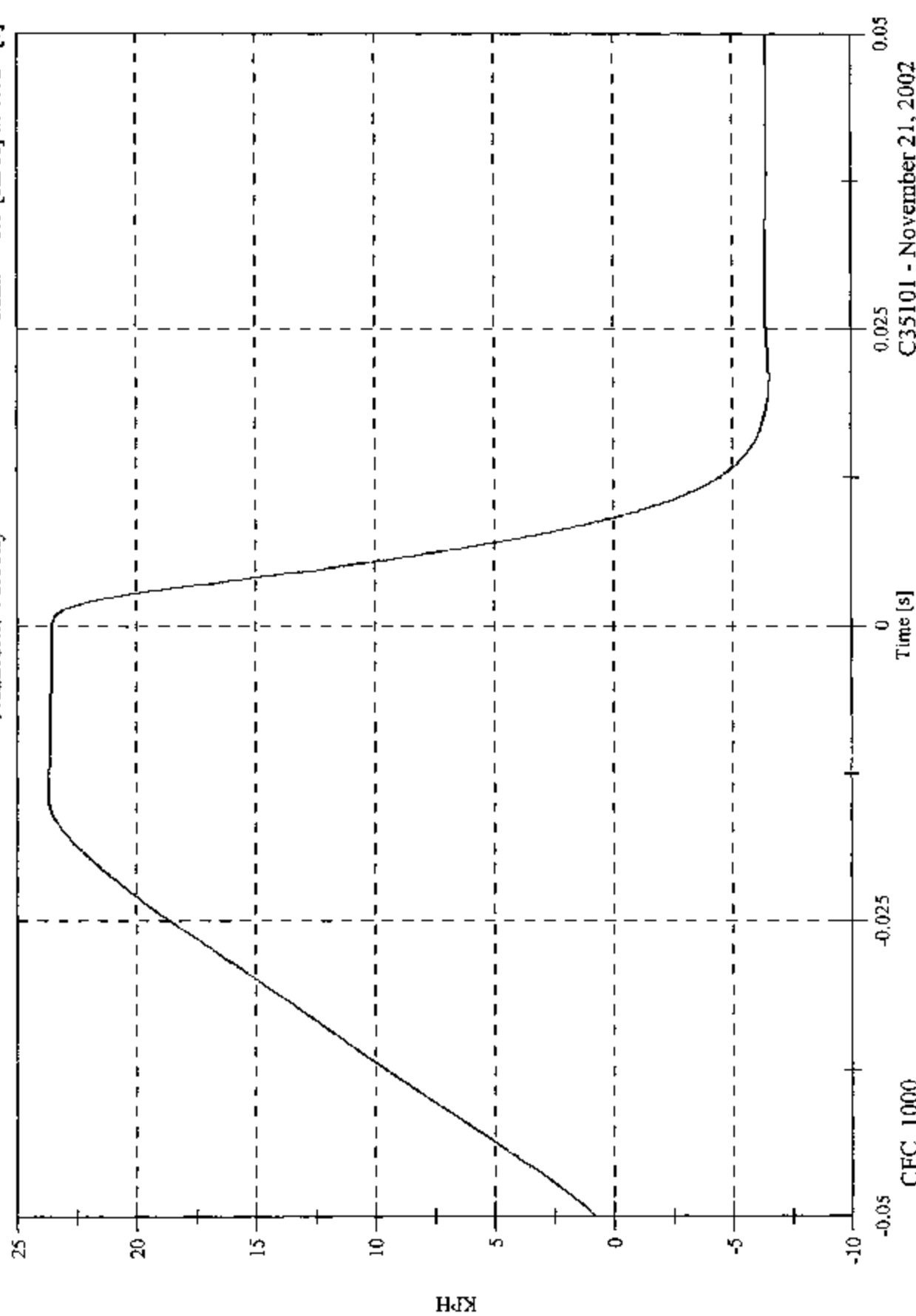


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Max: 23.7 [KPH] at -0.014 [s]

Min: -6.5 [KPH] at 0.021 [s]

Headform Velocity



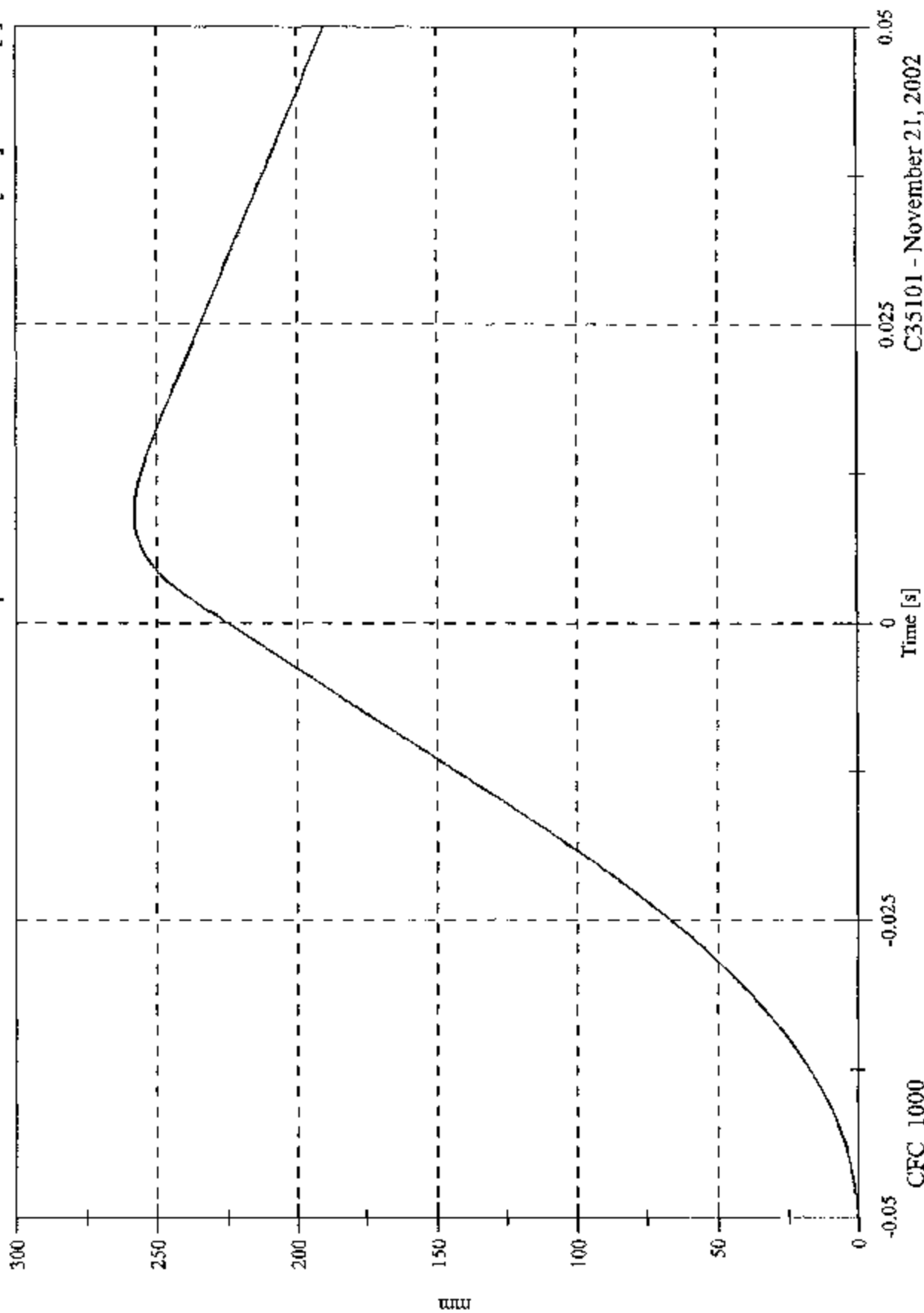
CFC_1000

Time [s]

C35101 - November 21, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Displacement

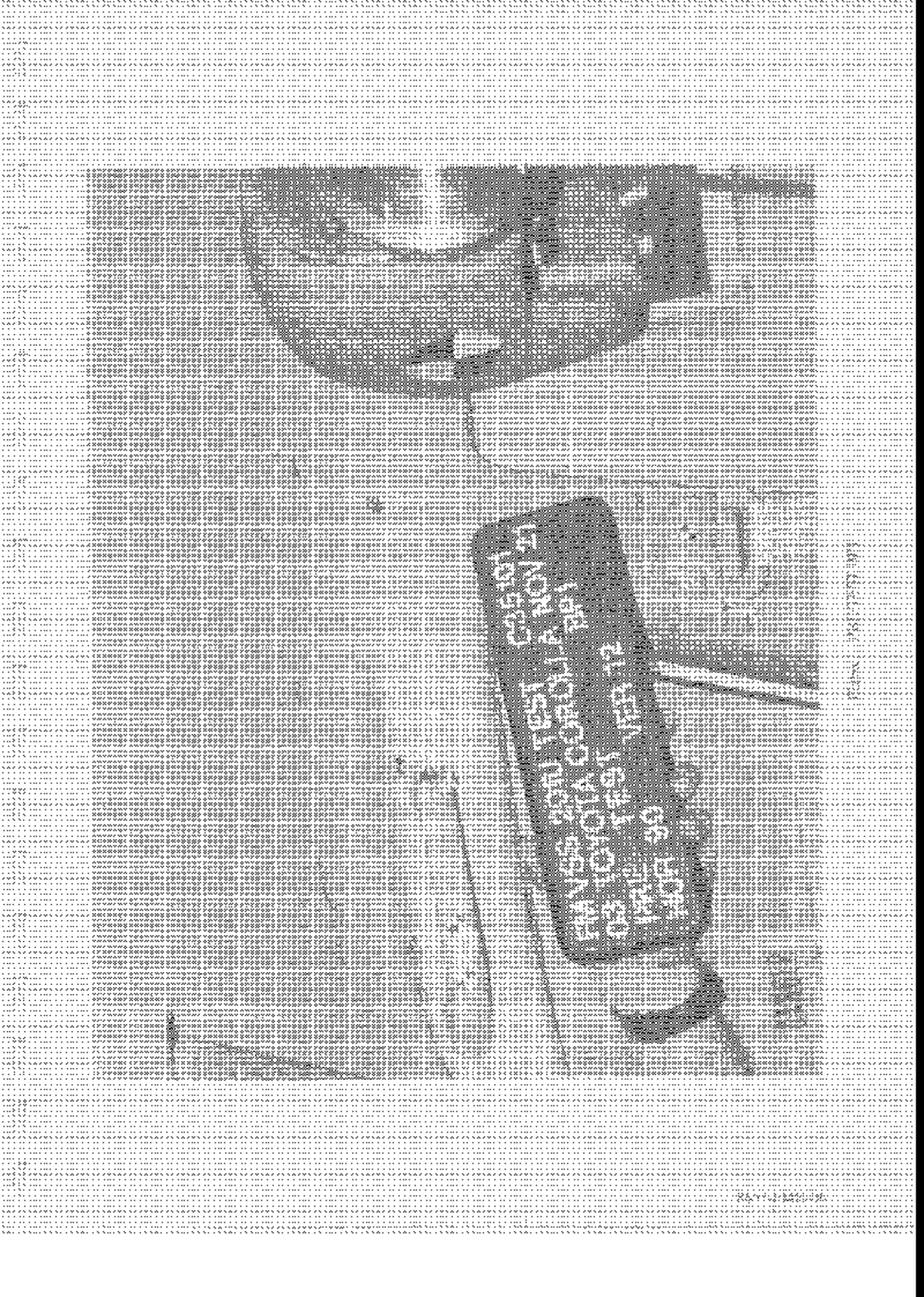
Max: 258.1 [mm] at 0.009 [s]
Min: 0.3 [mm] at -0.050 [s]

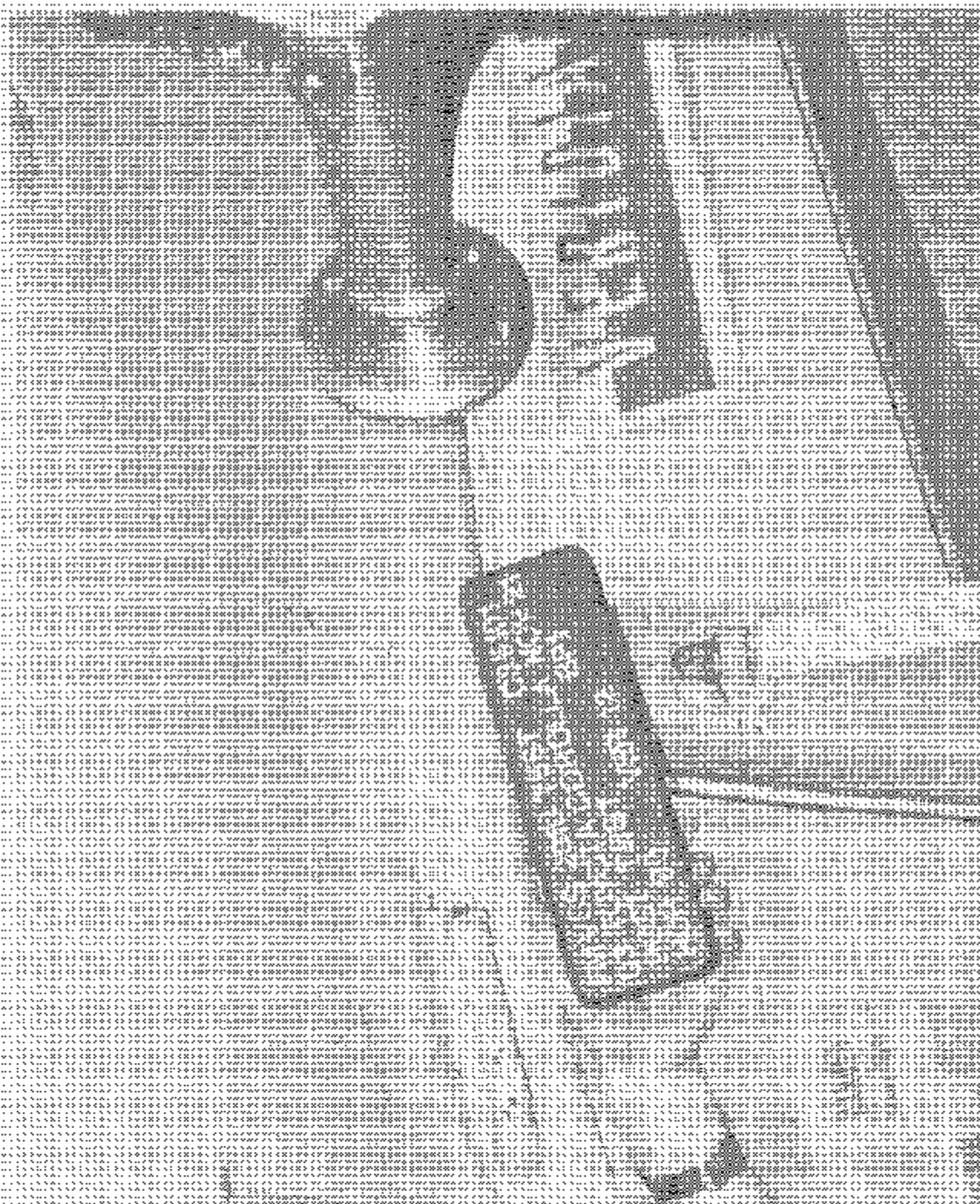


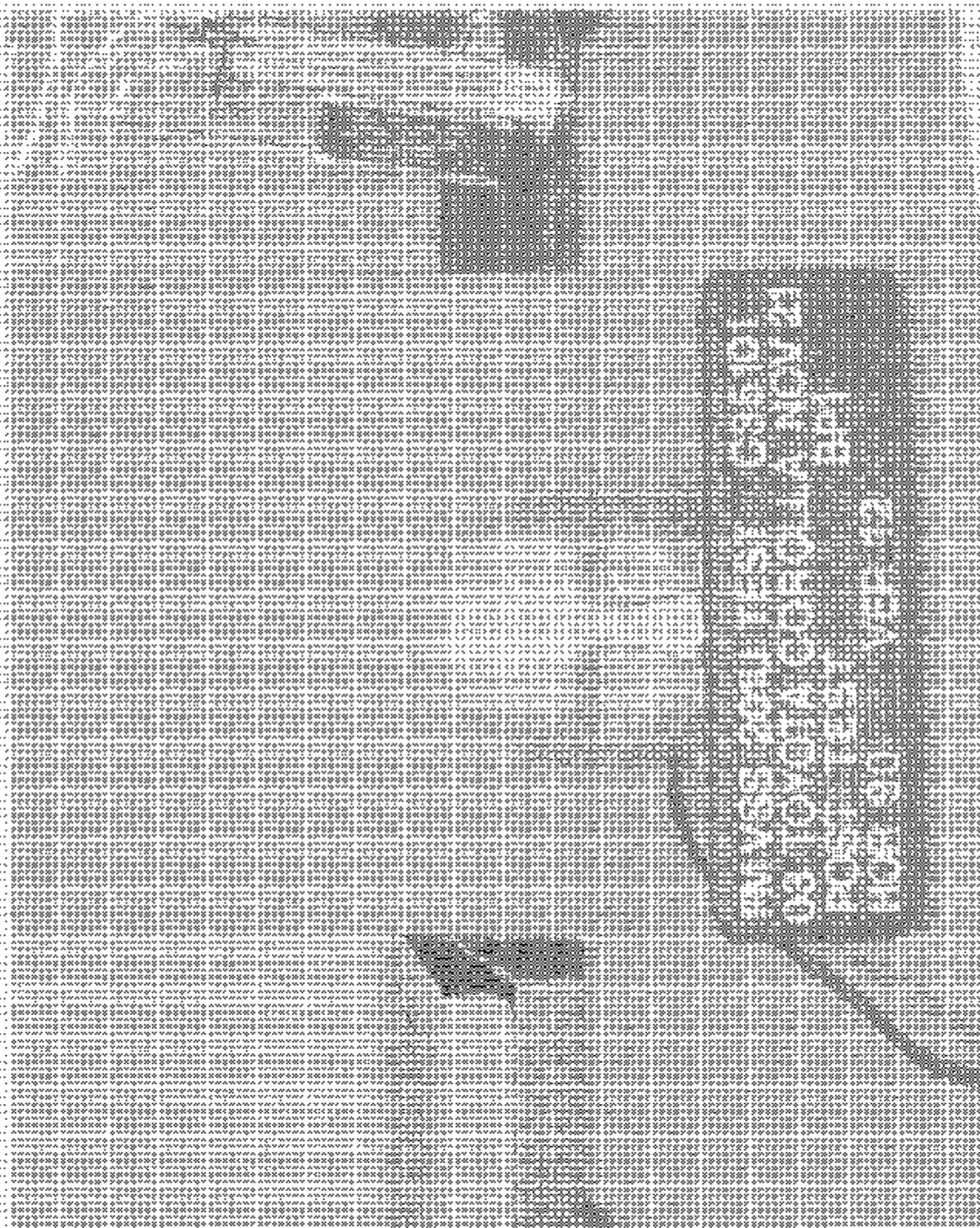
CFC_1000

Time [s]

C35101 - November 21, 2002







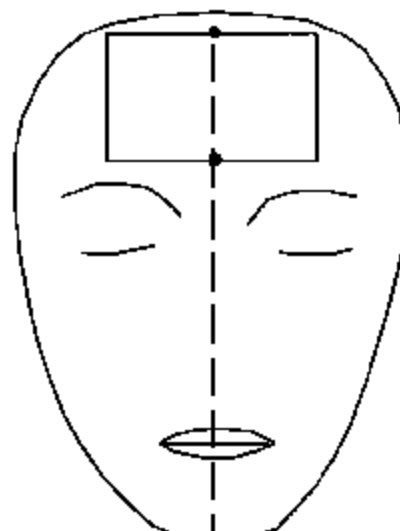
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR32EX3C078949
 Vehicle NHTSA No.: C35.01 Month & Year of Manufacture: Sept. 02

Test Number: 7 Test Date: 11/22/02
 Target Location: DRIVER SIDE REAR PILLAR Target Code: RP2
 Horizontal Impact Angle: 296 ° Vertical Impact Angle: 17°
 Ambient Temperature: 20 °C Time of Impact: 9:20
 Headform Number: 0355

Impact Point:

Description:

Description:	From lower midpoint				
On centerline	14	mm up			
On centerline	12	-	mm right	x	mm left



Free Motion HIC: 505.6 HIC(d): 547.9
 Impact Velocity (kph): 23.51 HIC11: 1.1 msec HIC12: 11.0 msec

Post-Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - RP2

FMH Headform 0355

Location: RP2

Test Date: November 22, 2002

Work File: RP2

TEST RESULTS

Lab Temperature: 20 C

HICd: 547.9

Lab Humidity: 32 %

HIC (36ms): 505.6

Velocity at Impact: 23.51 KPH

t1: 1.1 msec

t2: 11.0 msec

Free Flight Distance: 219.82 mm

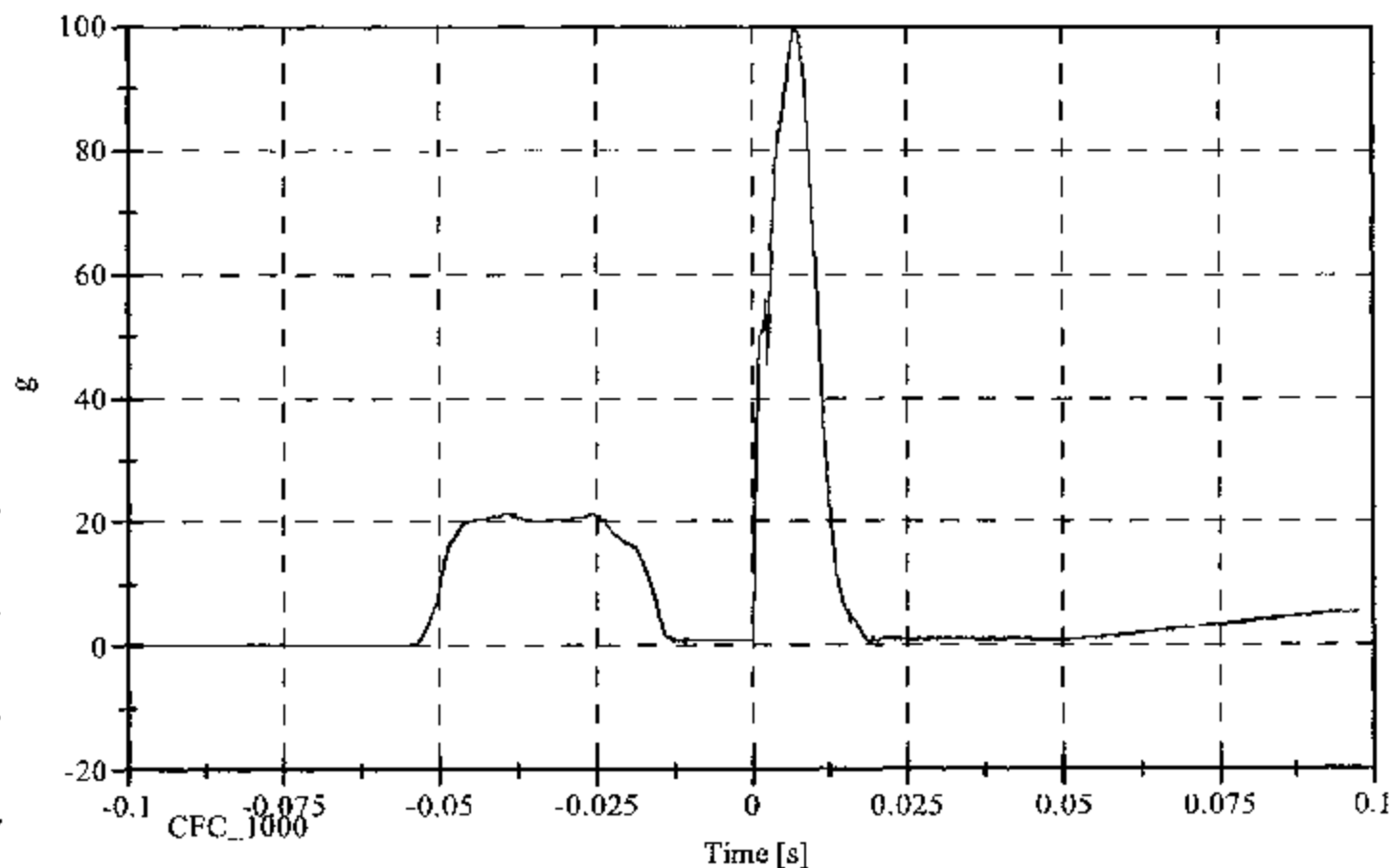
Duration: 9.8 msec

Average Acceleration: 8.9 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 99.8 [g] at 0.007 [s]

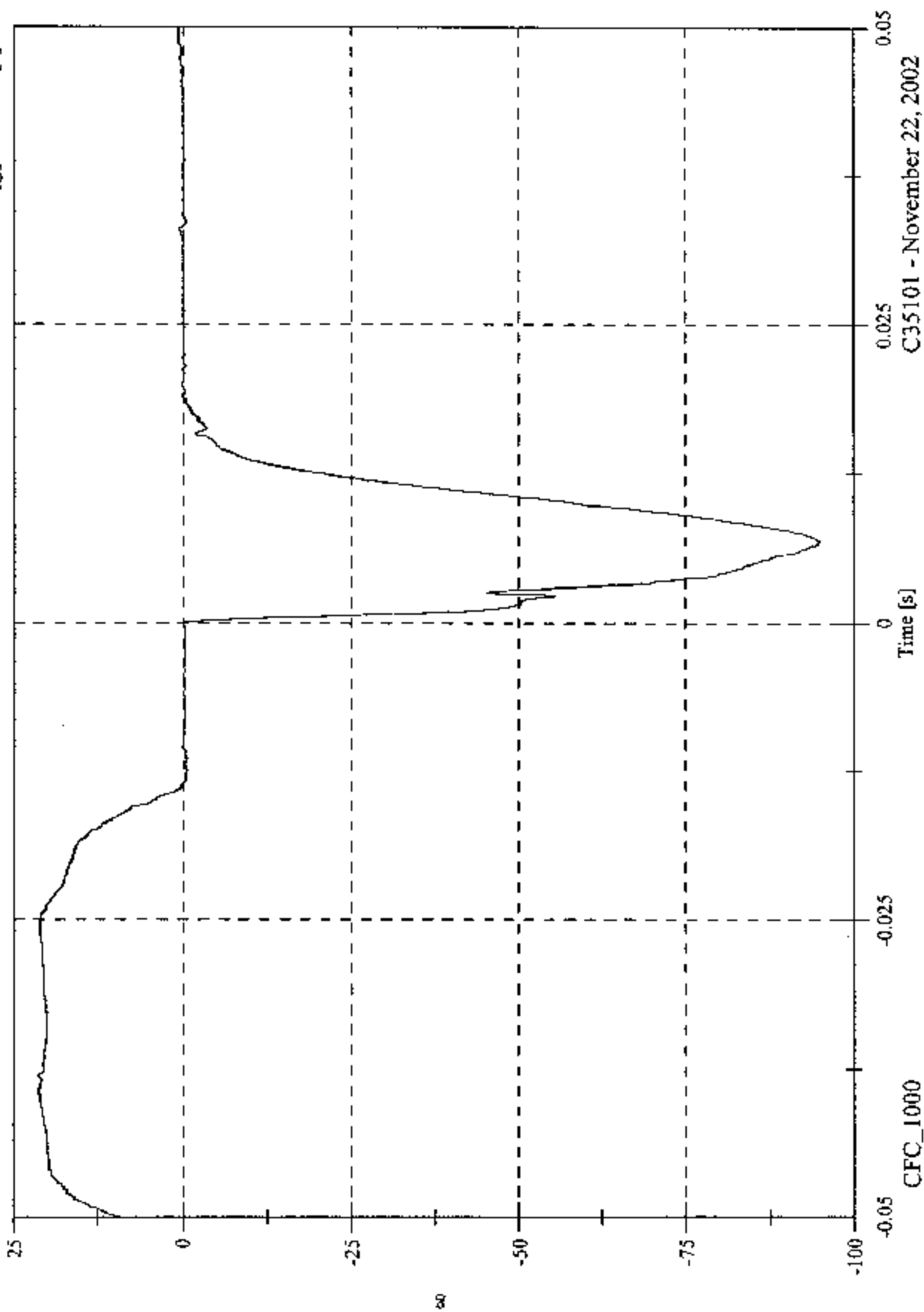
Min: -0.0 [g] at -0.100 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform X Acceleration

Max: 21.4 [g] at -0.038 [s]
Min: -94.8 [g] at 0.007 [s]

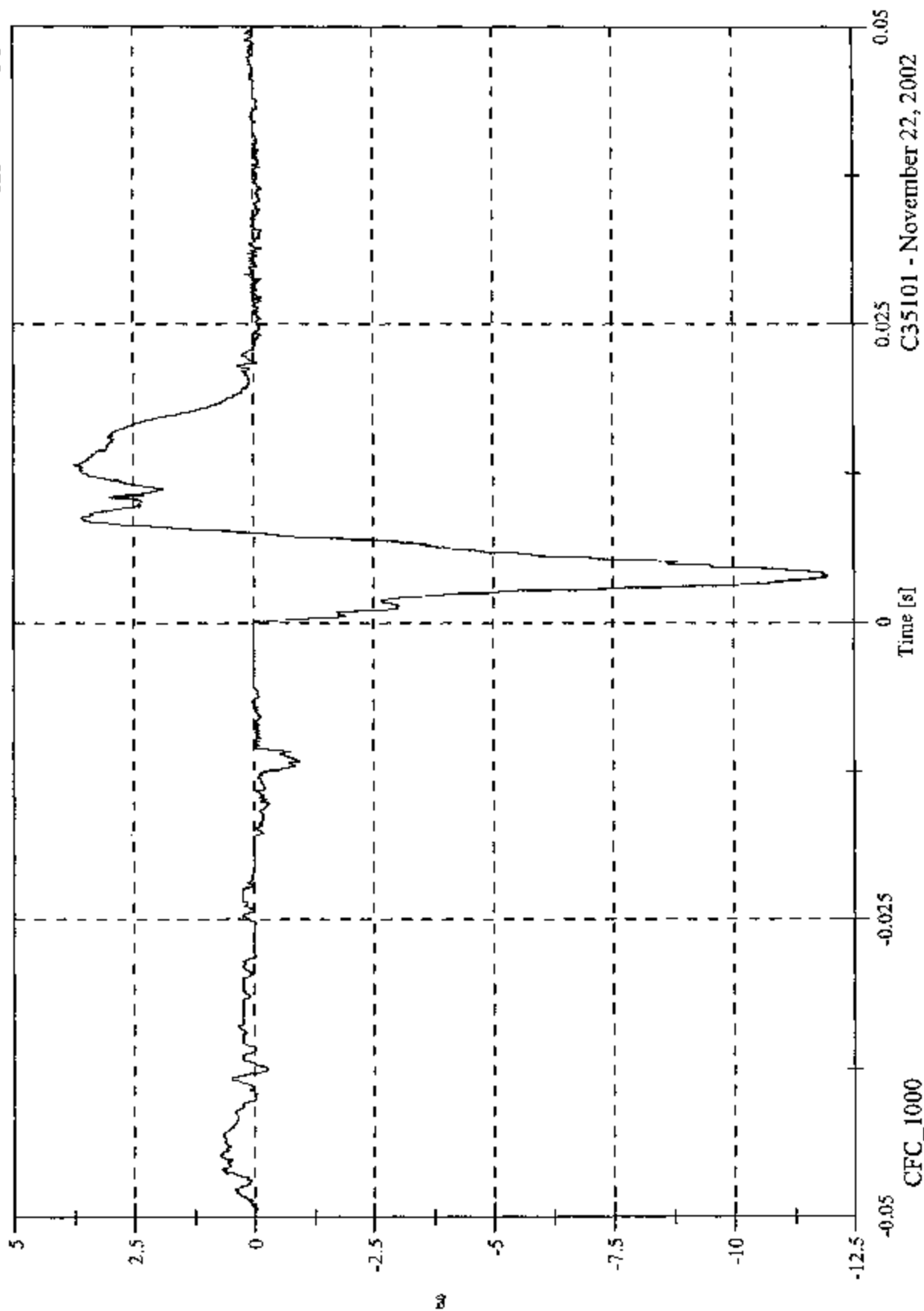


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Y Acceleration

Max: 3.7 [g] at 0.013 [s]

Min: -11.9 [g] at 0.004 [s]

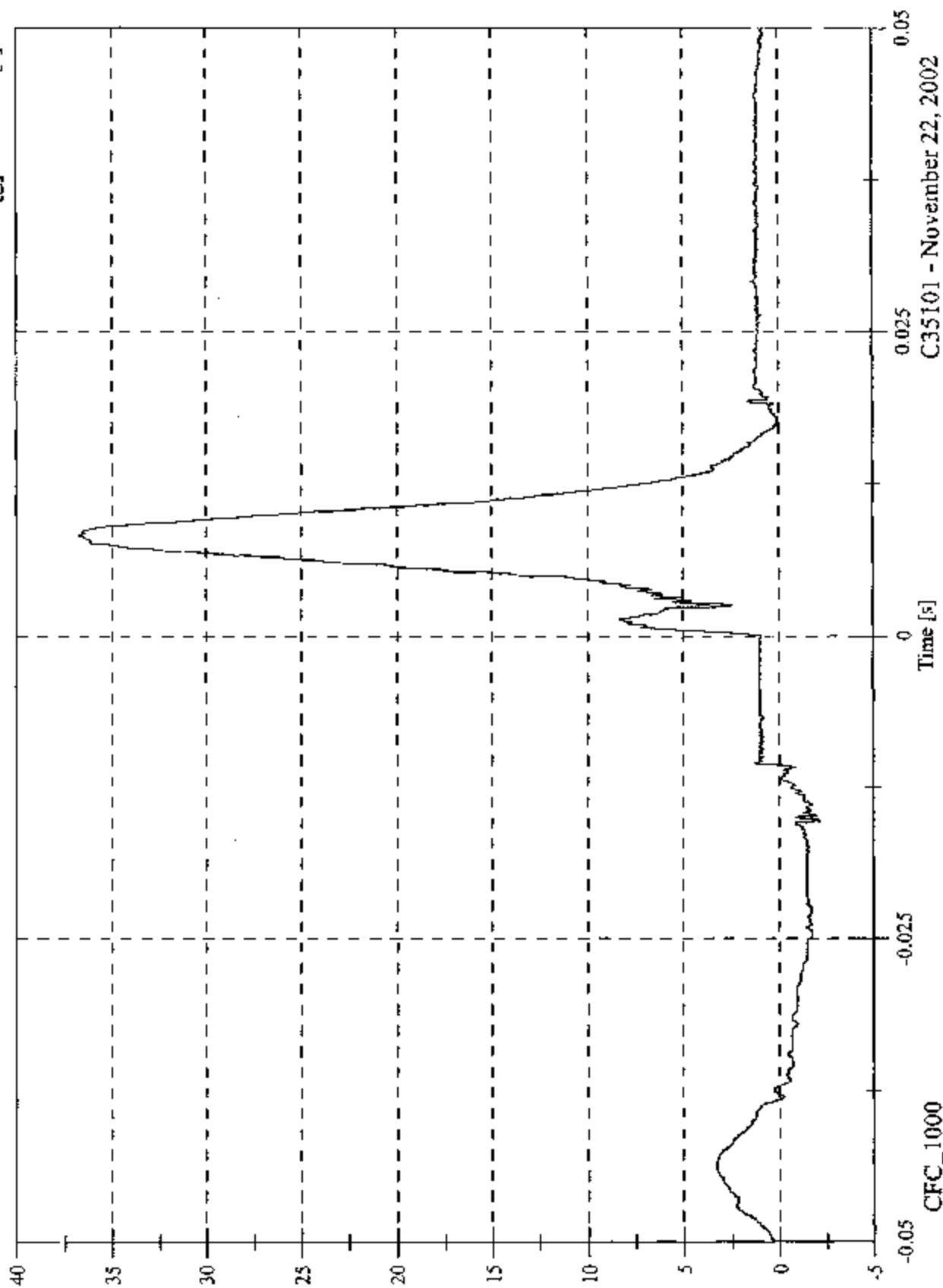


C35101 - November 22, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Z Acceleration

Max: 36.7 [g] at 0.008 [s]

Min: -2.1 [g] at -0.015 [s]



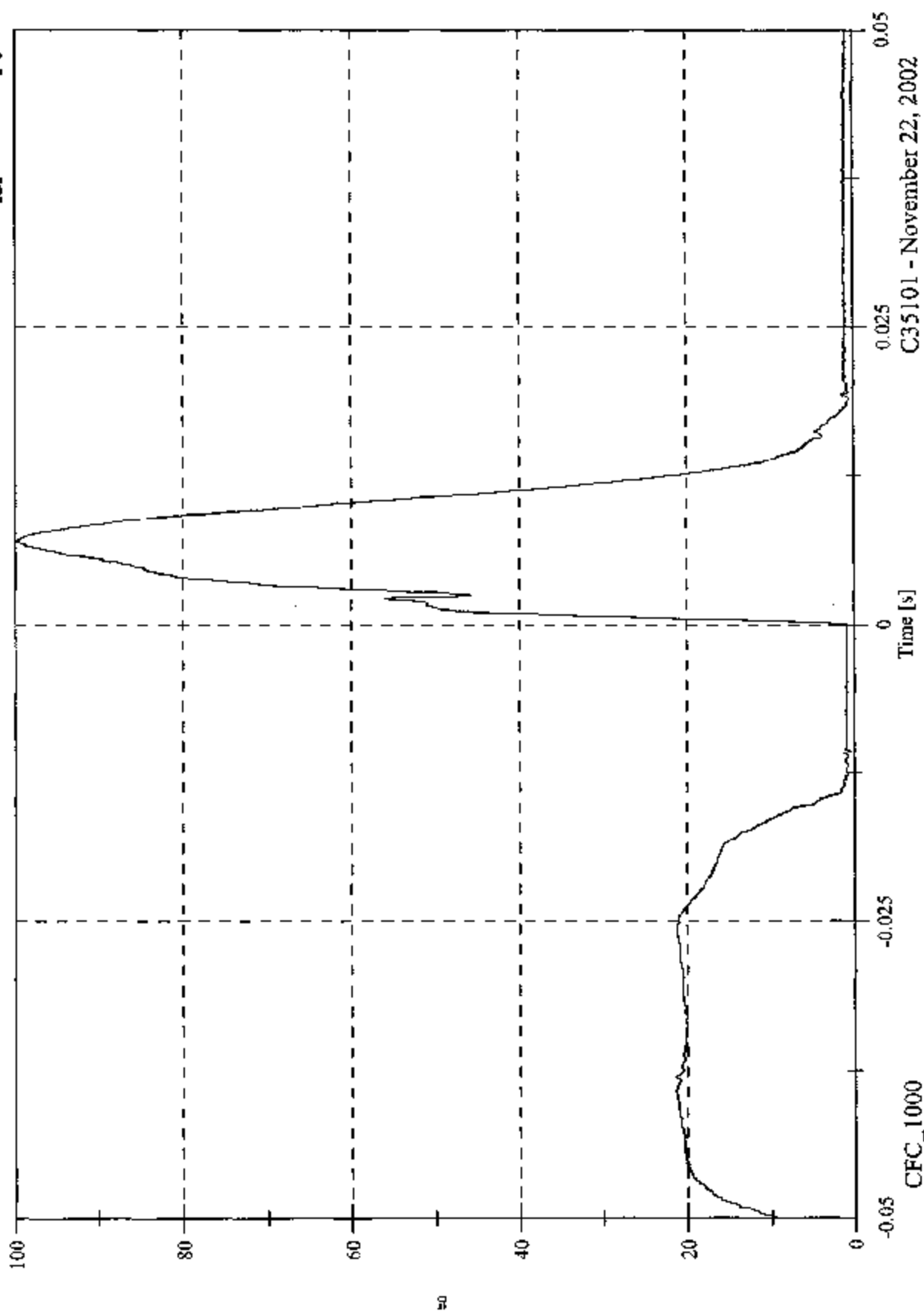
CFC_1000

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Resultant

Max: 99.8 [g] at 0.007 [s]

Min: 0.4 [g] at -0.011 [s]

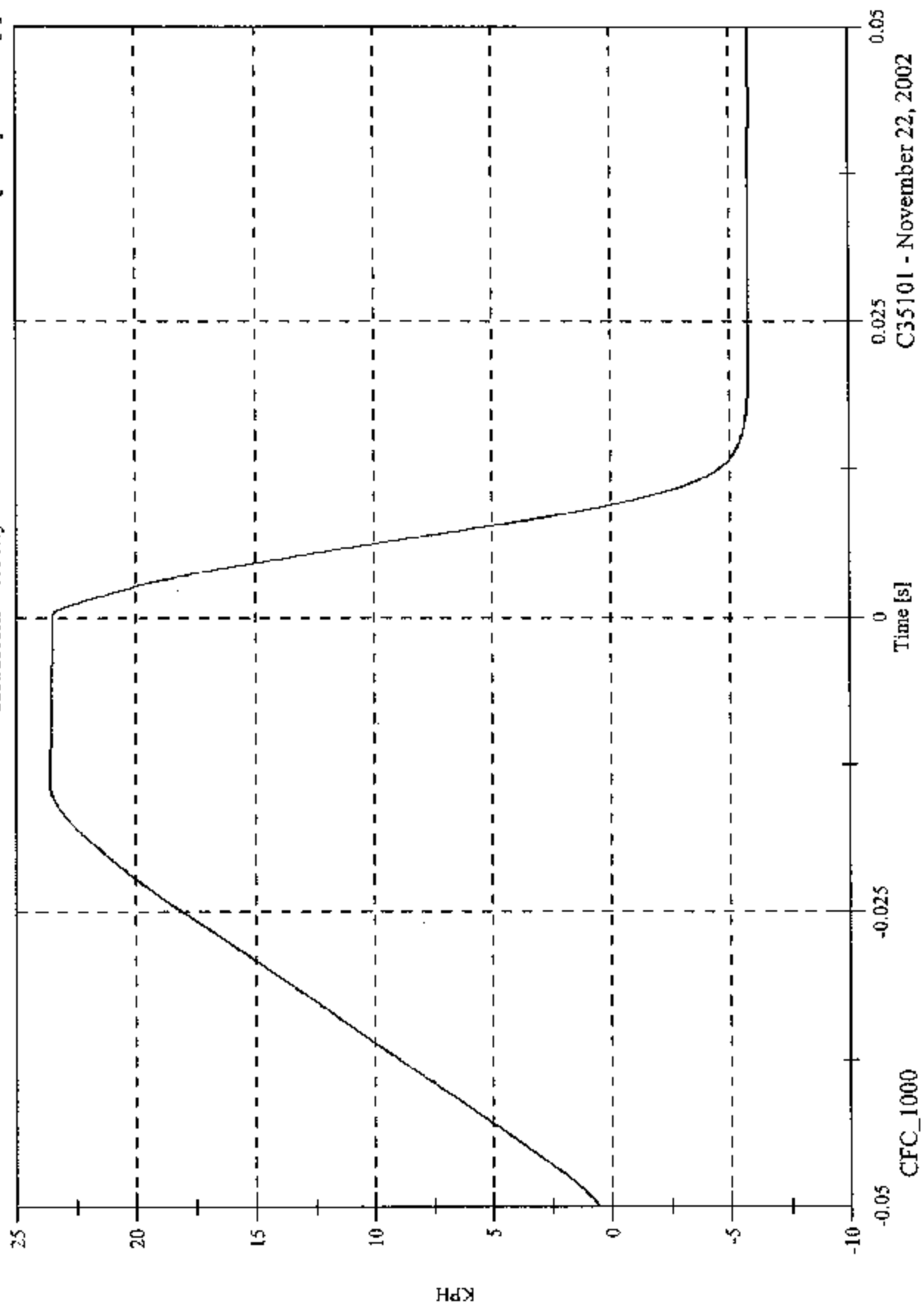


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Velocity

Max: 23.6 [KPH] at -0.014 [s]

Min: -5.8 [KPH] at 0.043 [s]

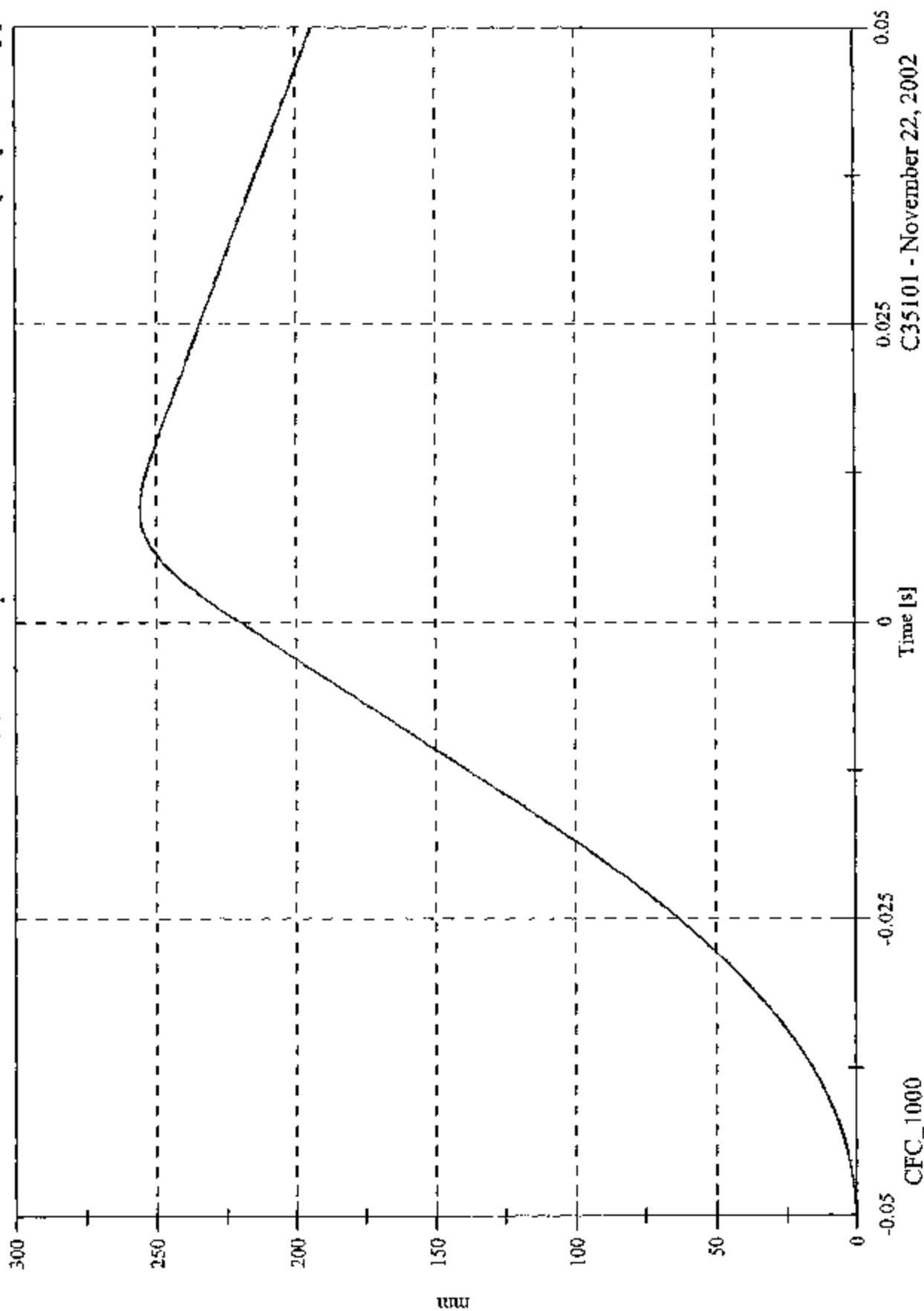


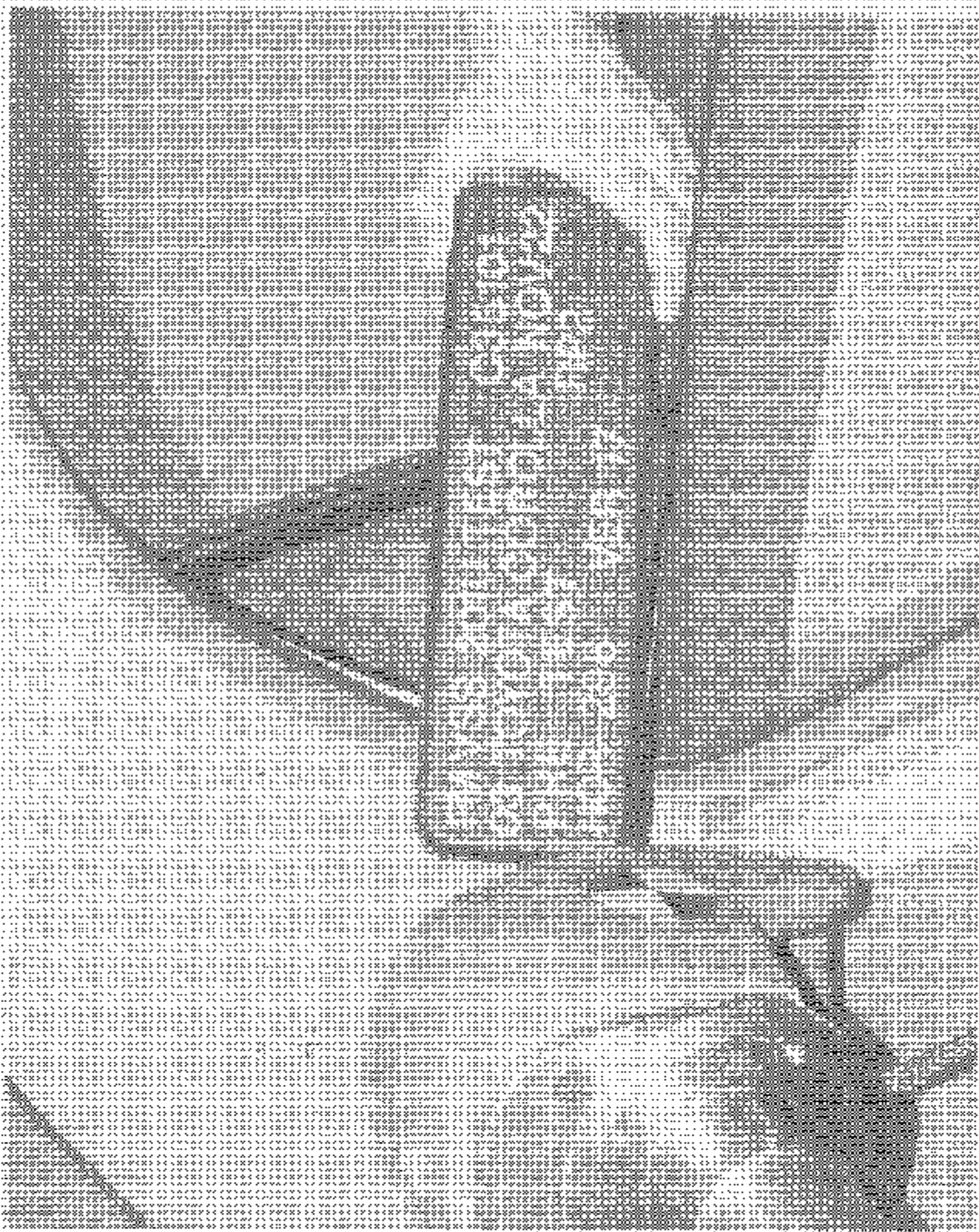
C35101 - November 22, 2002

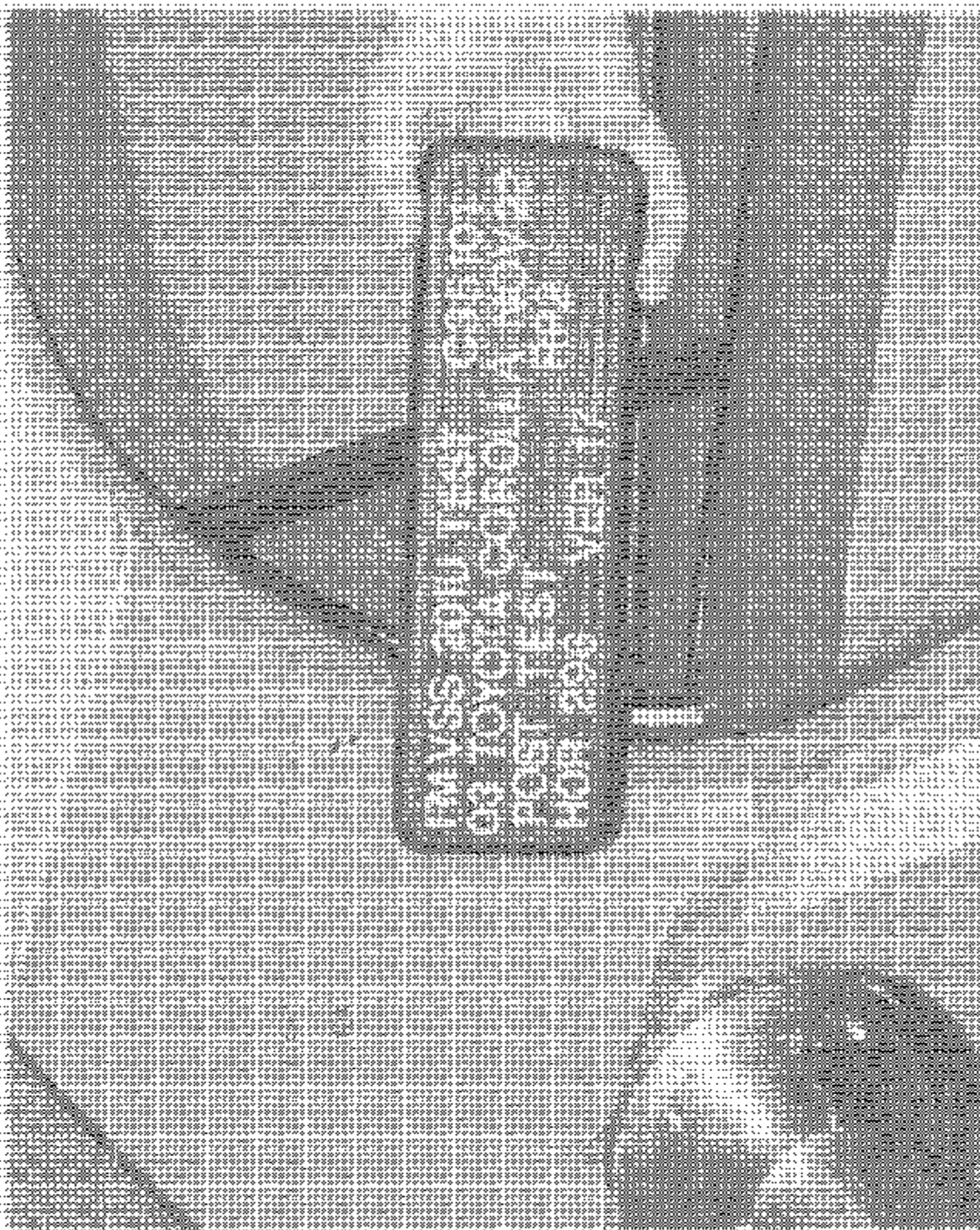
FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

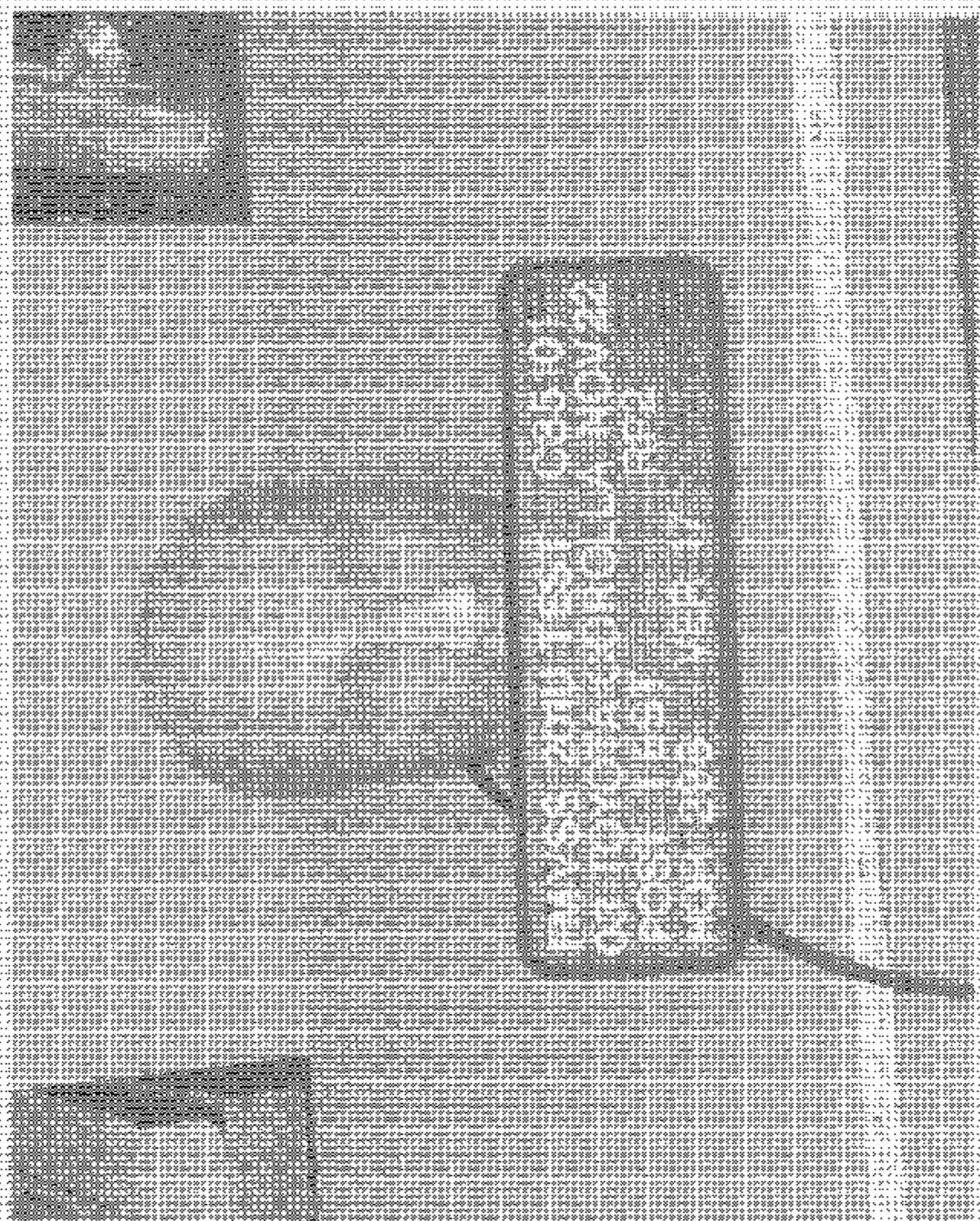
Headform Displacement

Max: 255.9 [mm] at 0.010 [s]
Min: 0.3 [mm] at -0.050 [s]









2025 RELEASE UNDER E.O. 14176

2025 RELEASE

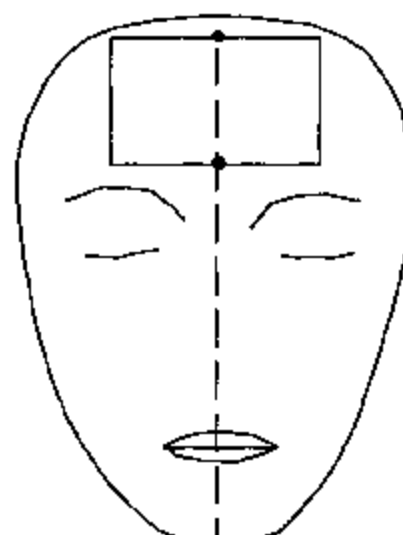
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2F11BR32EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

Test Number: 8 Test Date: 11/22/02
 Target Location: DRIVER SIDE B-PILLAR Target Code: BP2
 Horizontal Impact Angle: 270 ° Vertical Impact Angle: 4 °
 Ambient Temperature: 20 °C Time of Impact: 9:55
 Headform Number: 805

Impact Point:

Description:

Description:	From lower midpoint				
On centerline	10	mm up			
On centerline	4	-	mm right	x	mm left



Free Motion HIC: 555.0 HIC(d): 515.0
 Impact Velocity (kph): 23.45 HIC(T) 1.1 msec HIC(T2) 11.3 msec

Post-Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - BP2

FMH Headform 0805

Location: BP2

Test Date: November 22, 2002

Work File: BP2

-----TEST RESULTS-----

Lab Temperature: 20 C

HICd: 555.0

Lab Humidity: 32 %

HIC (36ms): 515.0

Velocity at Impact: 23.45 KPH

t1: 1.1 msec

t2: 11.3 msec

Free Flight Distance: 214.89 mm

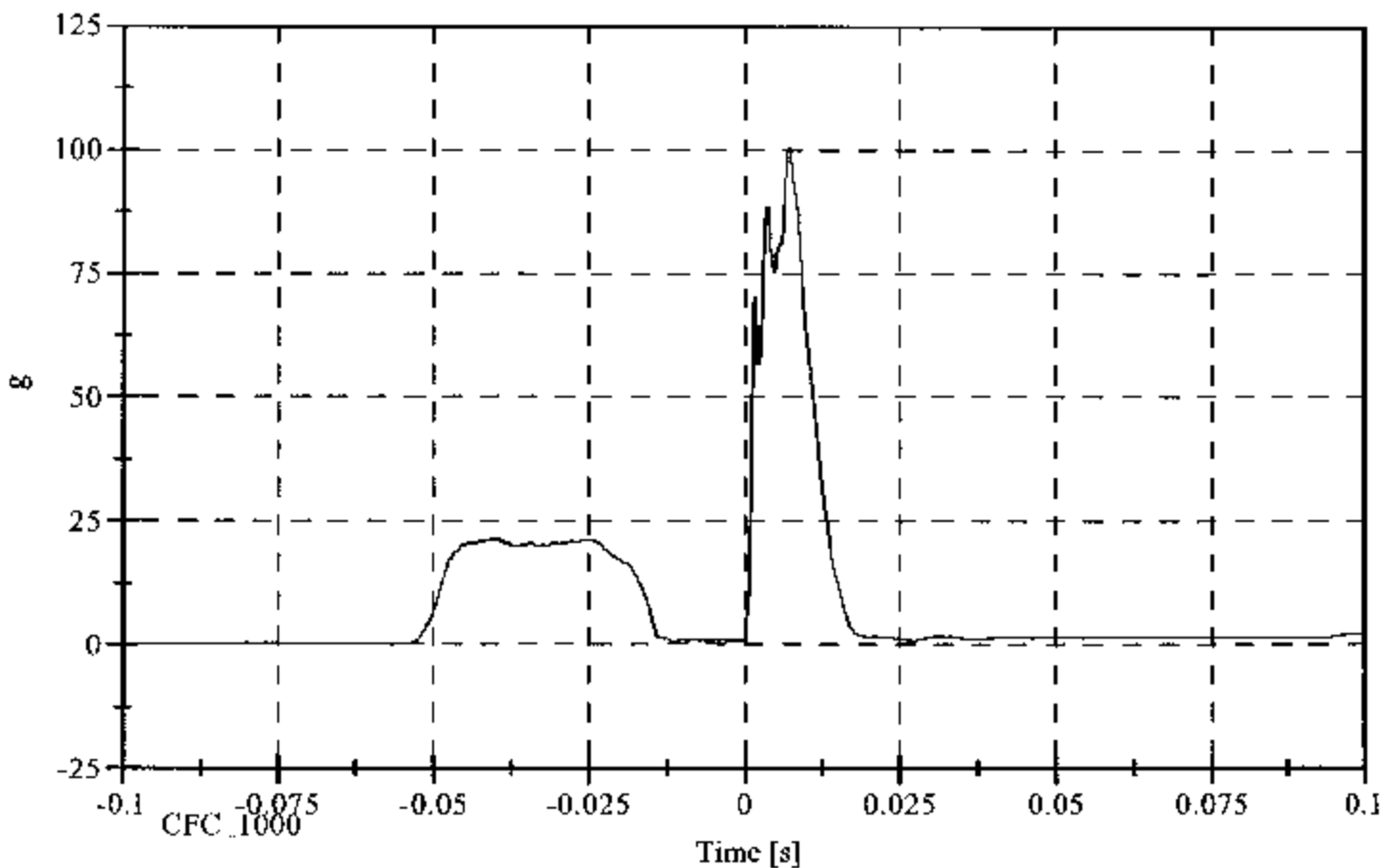
Duration: 10.2 msec

Average Acceleration: 8.7 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 100.7 [g] at 0.007 [s]

Min: -0.0 [g] at -0.099 [s]

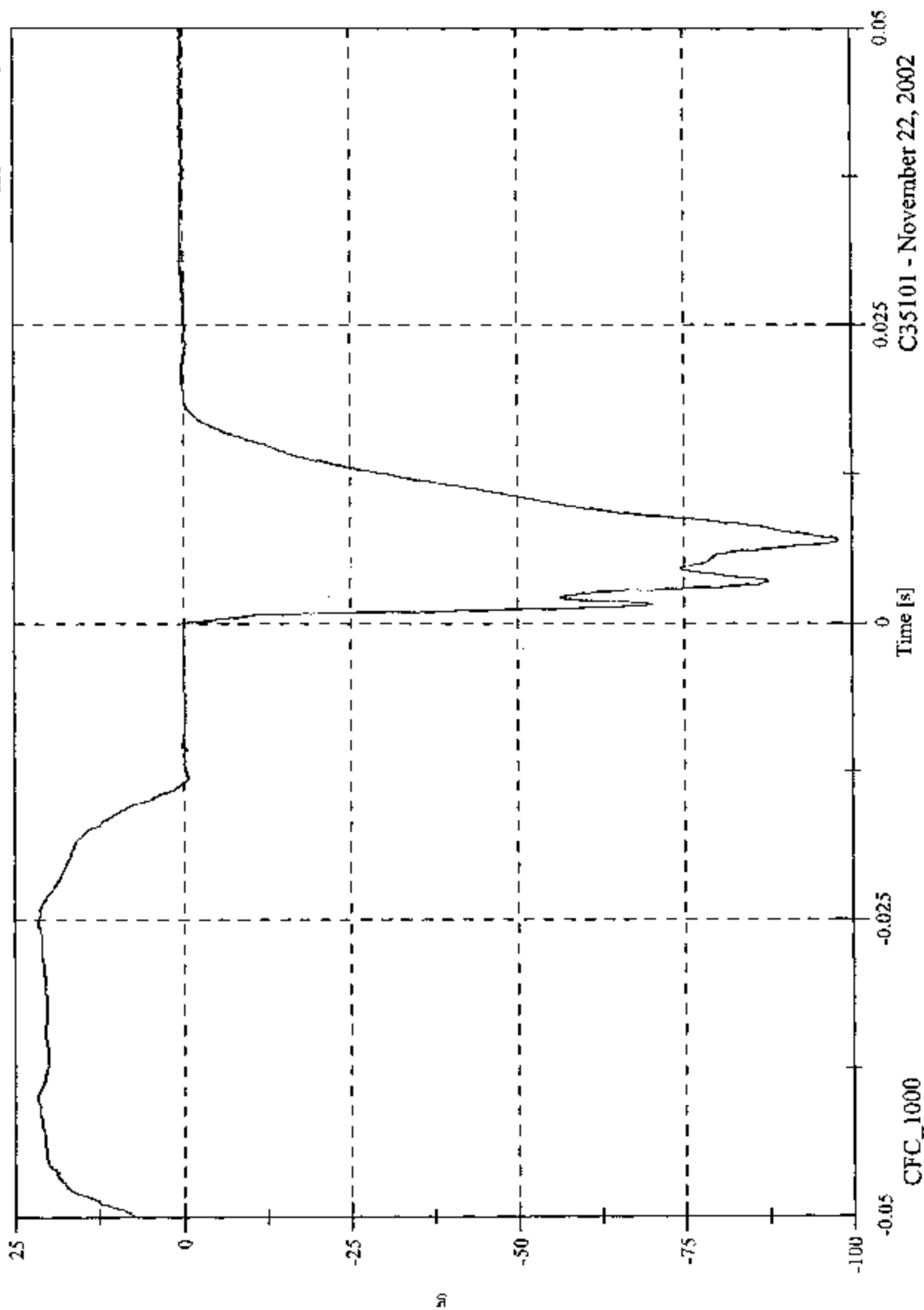


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform X Acceleration

Max: 21.6 [g] at -0.040 [s]

Min: -98.0 [g] at 0.007 [s]

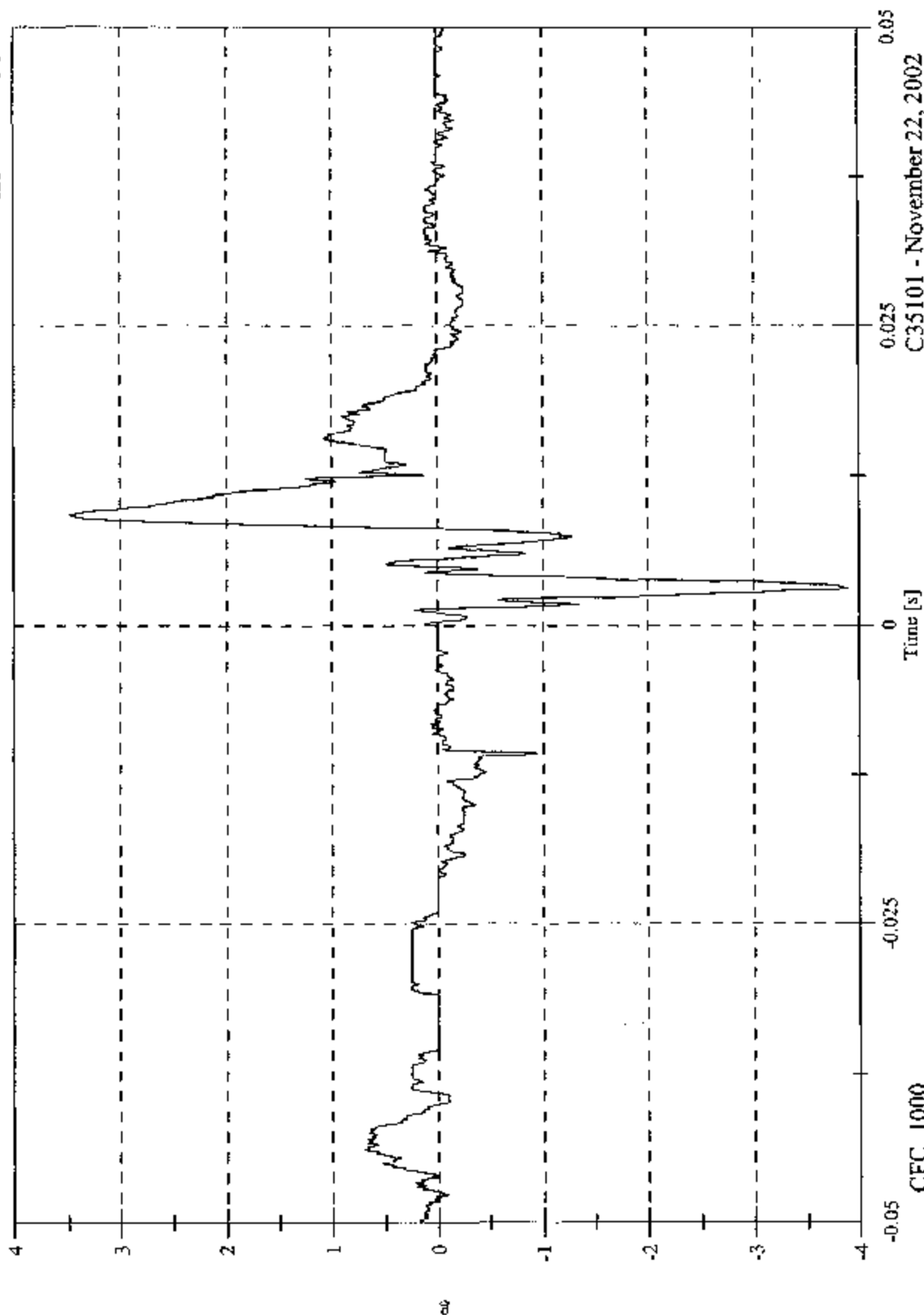


C35101 - November 22, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Y Acceleration

Max: 3.5 [g] at 0.009 [s]
Min: -3.9 [g] at 0.003 [s]



CFC_1000

Time [s]

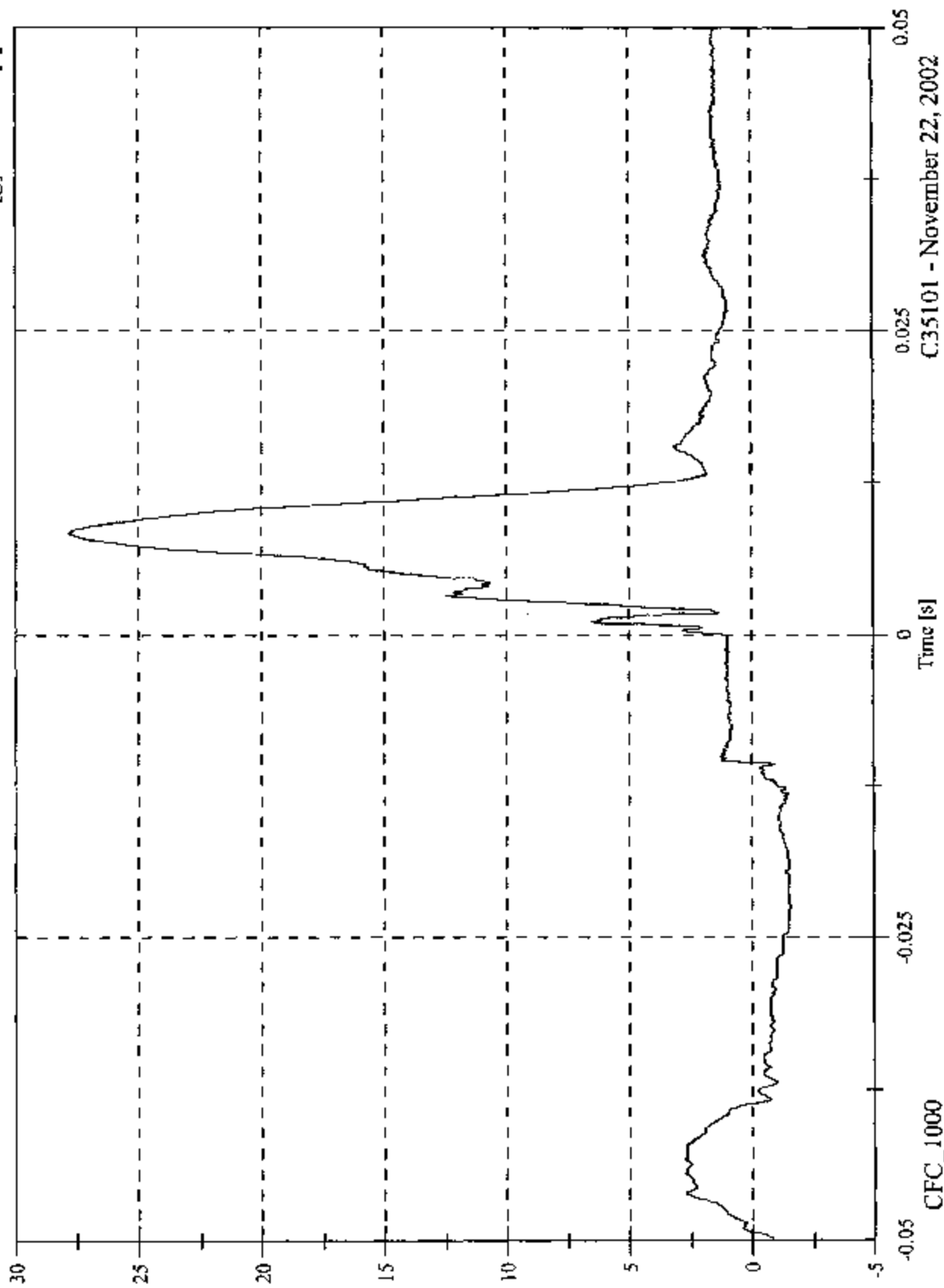
C35101 - November 22, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Z Acceleration

Max: 27.8 [g] at 0.008 [s]

Min: -1.6 [g] at -0.023 [s]

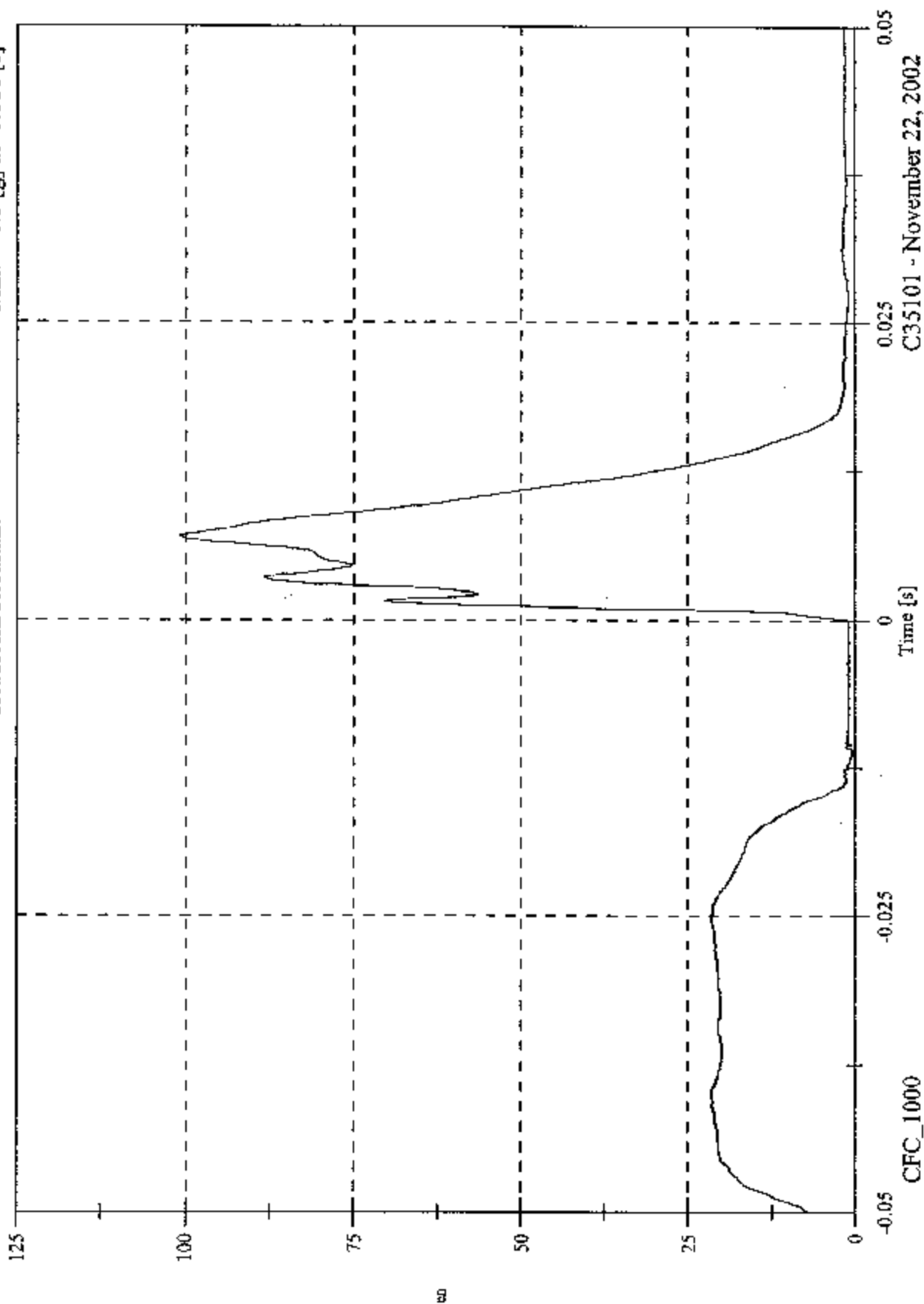


C35101 - November 22, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Resultant

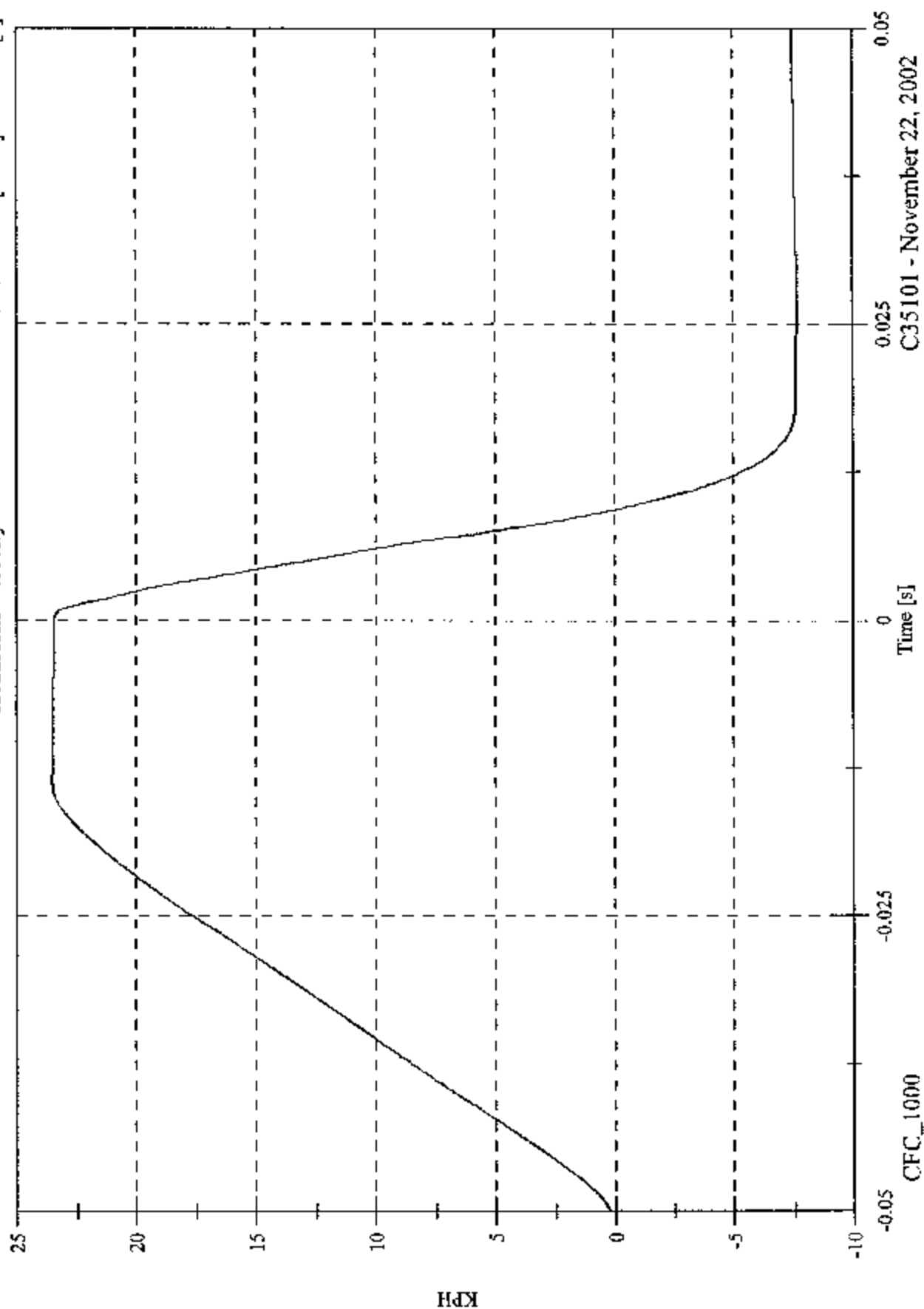
Max: 100.7 [g] at 0.007 [s]
Min: 0.5 [g] at -0.011 [s]



Max: 23.6 [KPH] at -0.013 [s]
Min: -7.6 [KPH] at 0.028 [s]

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

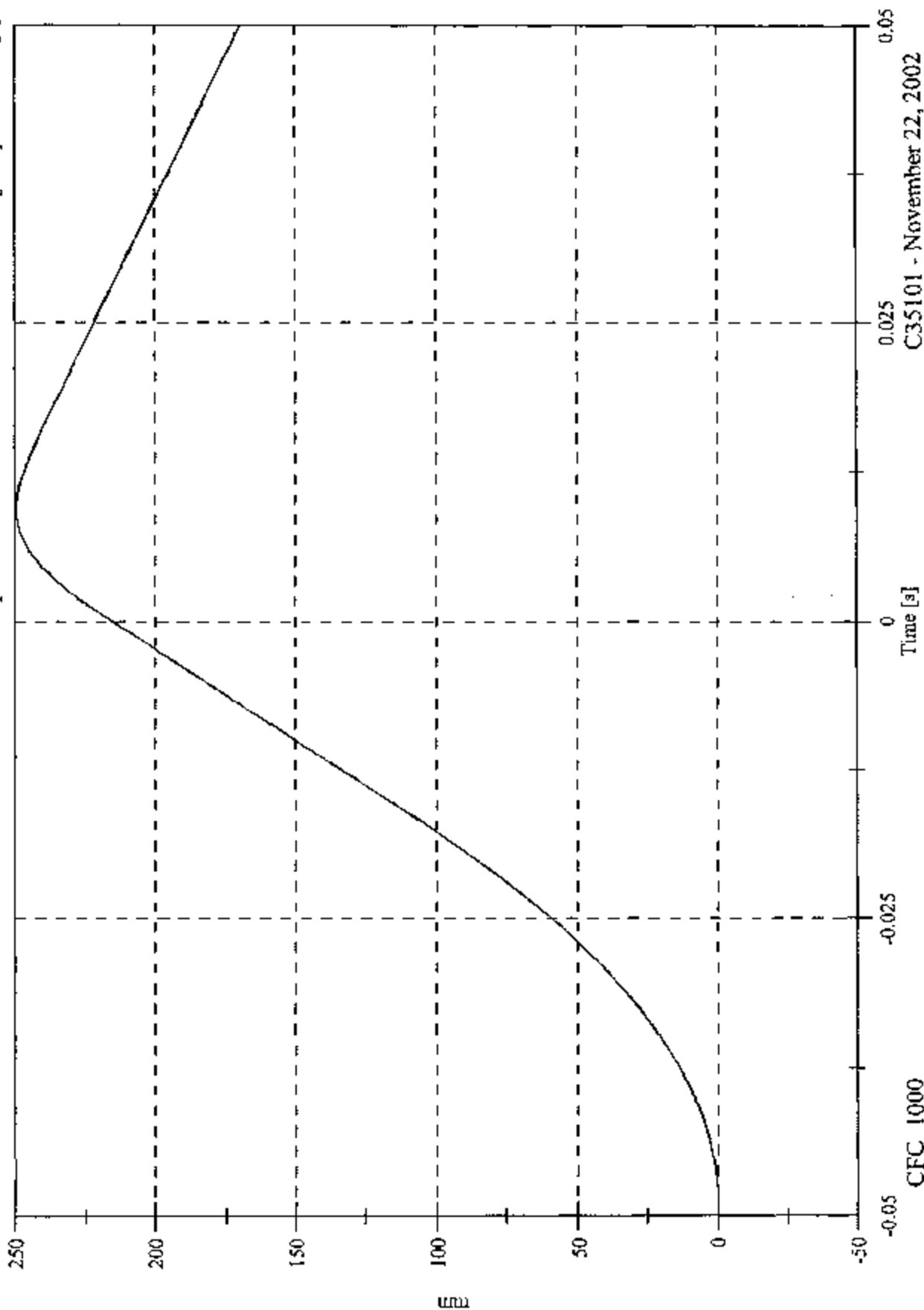
Headform Velocity



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Displacement

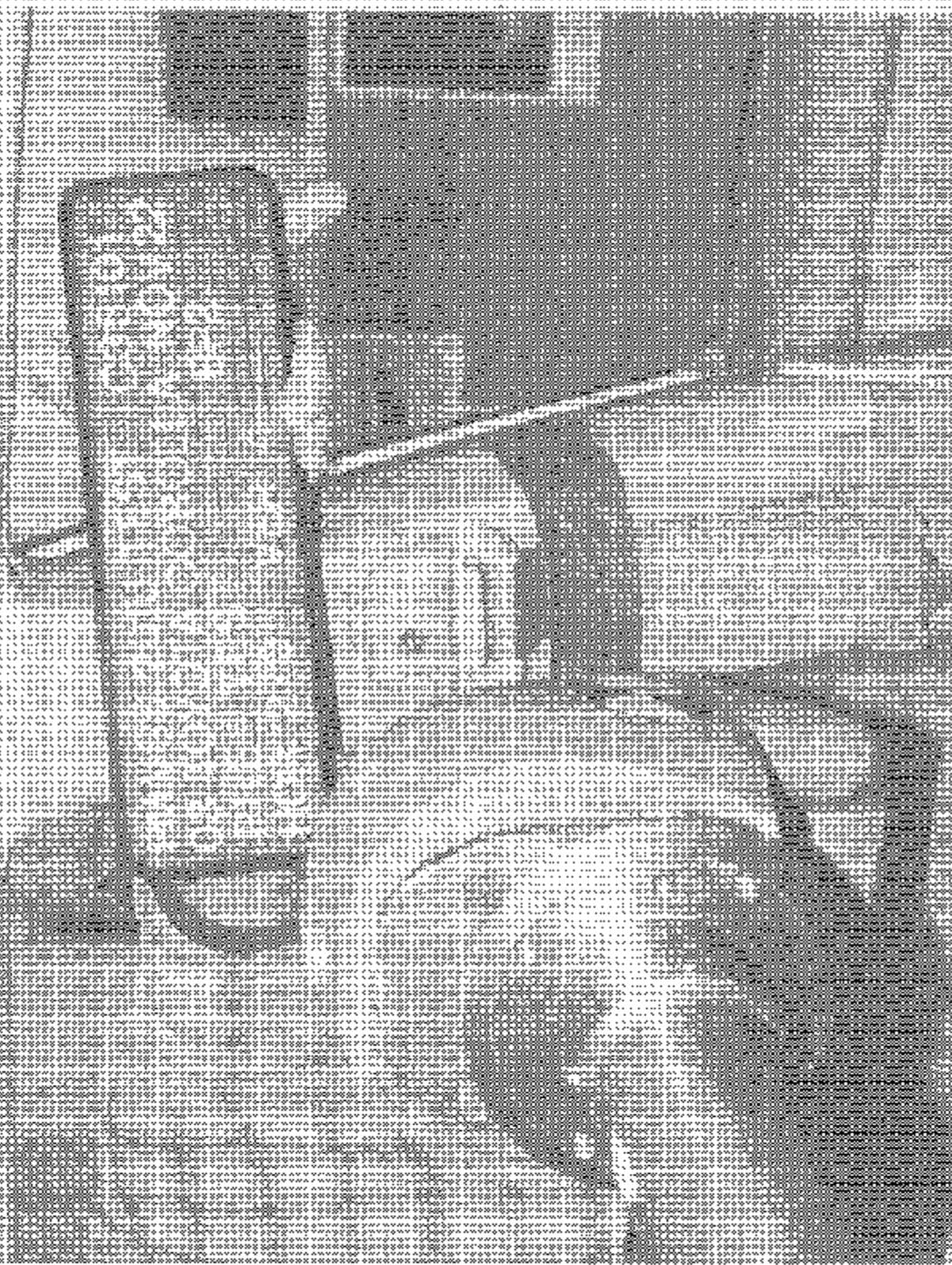
Max: 249.6 [mm] at 0.009 [s]
Min: -0.4 [mm] at -0.050 [s]

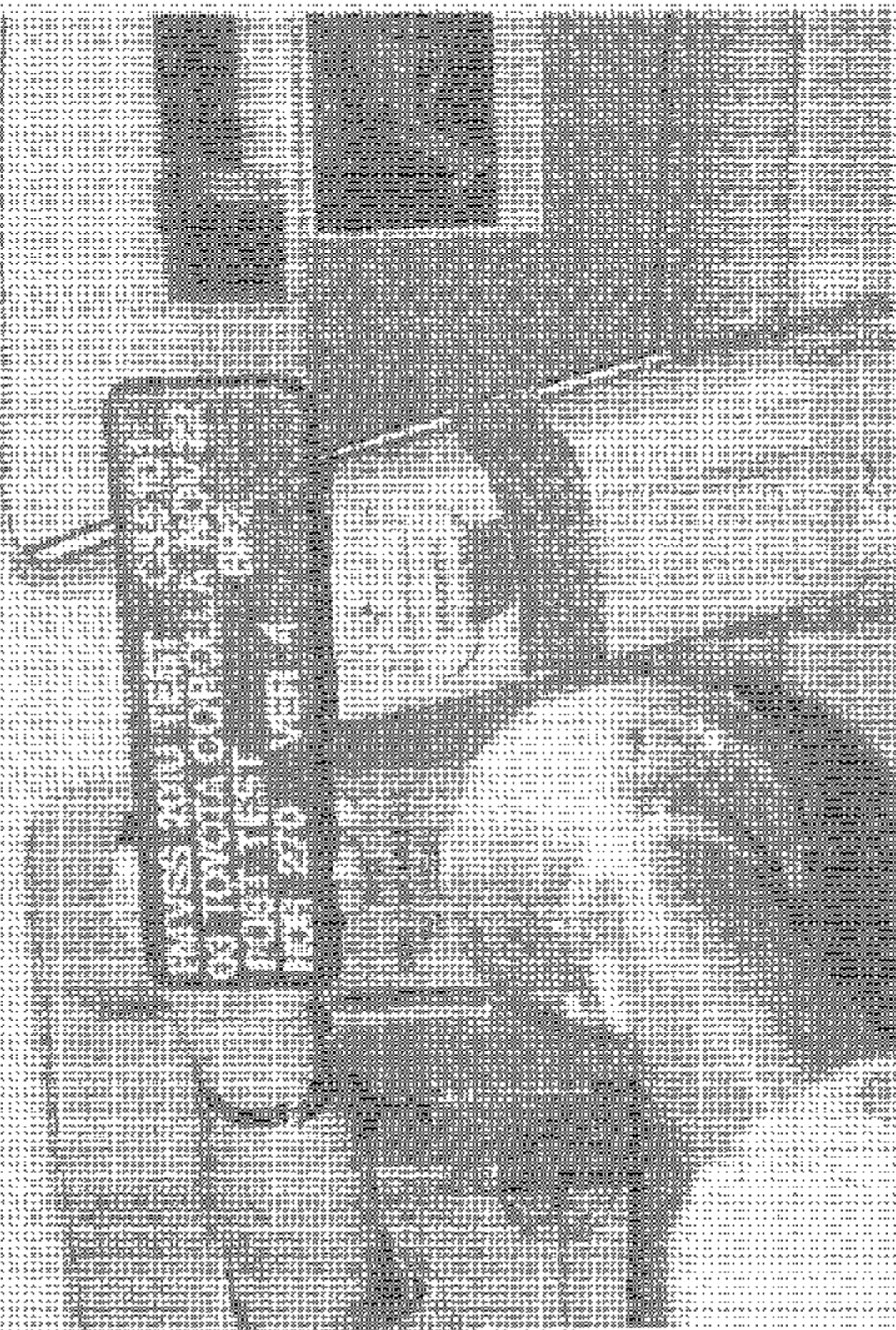


CFC_1000

Time [s]

C35101 - November 22, 2002





EMV3870E1 TEST C35101
C310Y01A CORRUPTA NOV22
EMV3870E1 TEST D42
EMV3870E1 VIEW 4

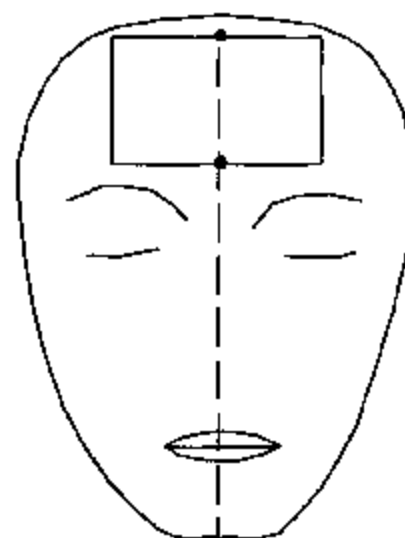
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR32EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

Test Number: 9 Test Date: 11/22/02
 Target Location: DRIVER SIDE UPPER ROOF Target Code: URBP
 Horizontal Impact Angle: 270 ° Vertical Impact Angle: 46 °
 Ambient Temperature: 20 °C Time of Impact: 10:30
 Headform Number: 0062

Impact Point:

Description:

Description:	From lower midpoint				
On centerline	41	mm up			
On centerline	5	-	mm right	x	mm left



Free Motion HIC: 755.6 HIC(d): 736.4
 Impact Velocity (kph): 23.70 HIC1: 3.1 msec HIC2: 9.9 msec

Post-Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - URI

FMH Headform 0062

Location: URBP

Test Date: November 22, 2002

Work File: URBP

TEST RESULTS

Lab Temperature: 20 C

HiCd: 736.4

Lab Humidity: 32 %

HIC (36ms): 755.6

Velocity at Impact: 23.70 KPH

t1: 3.1 msec

t2: 9.9 msec

Free Flight Distance: 221.46 mm

Duration: 6.8 msec

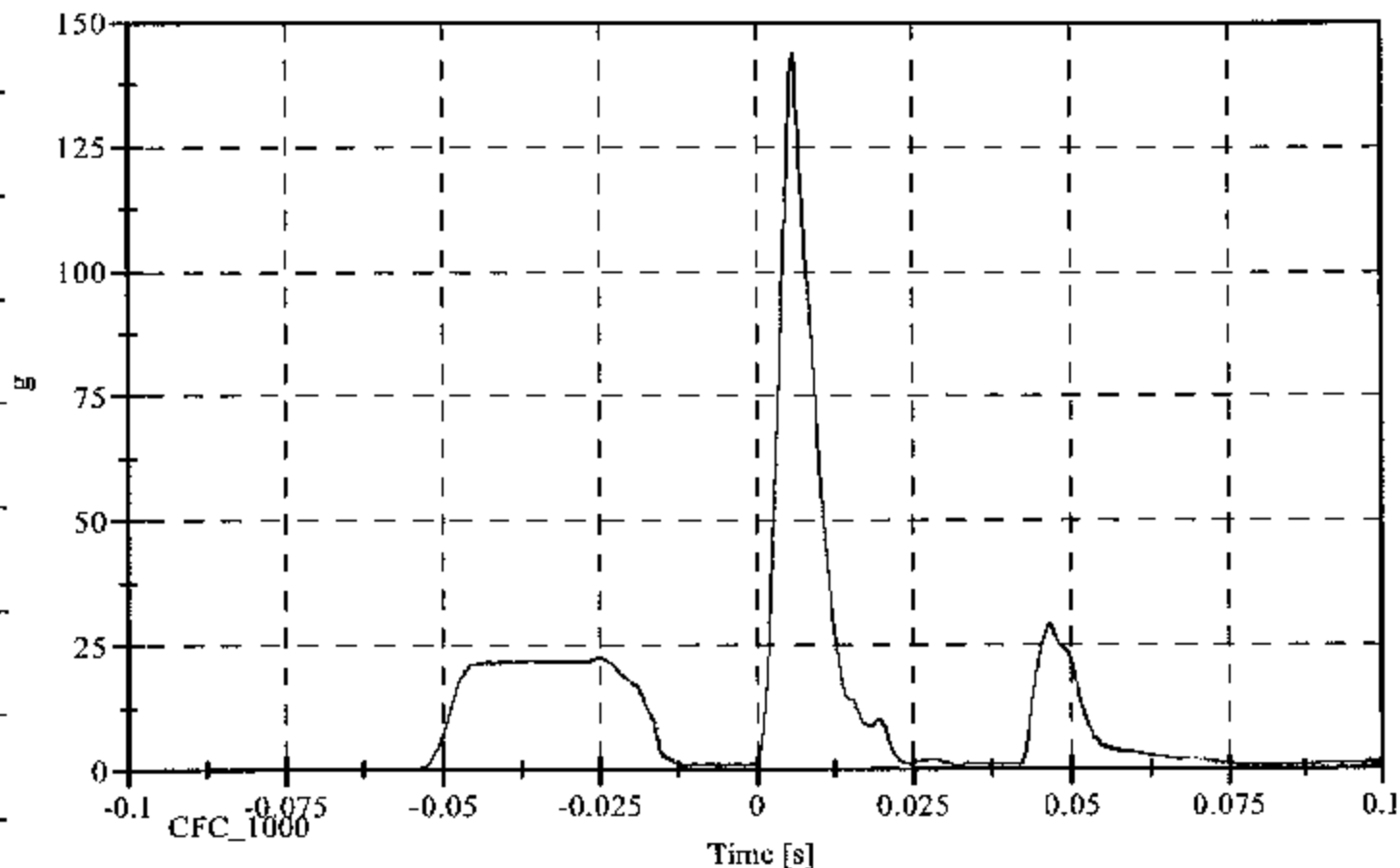
Average Acceleration: 10.2 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Max: 143.9 [g] at 0.006 [s]

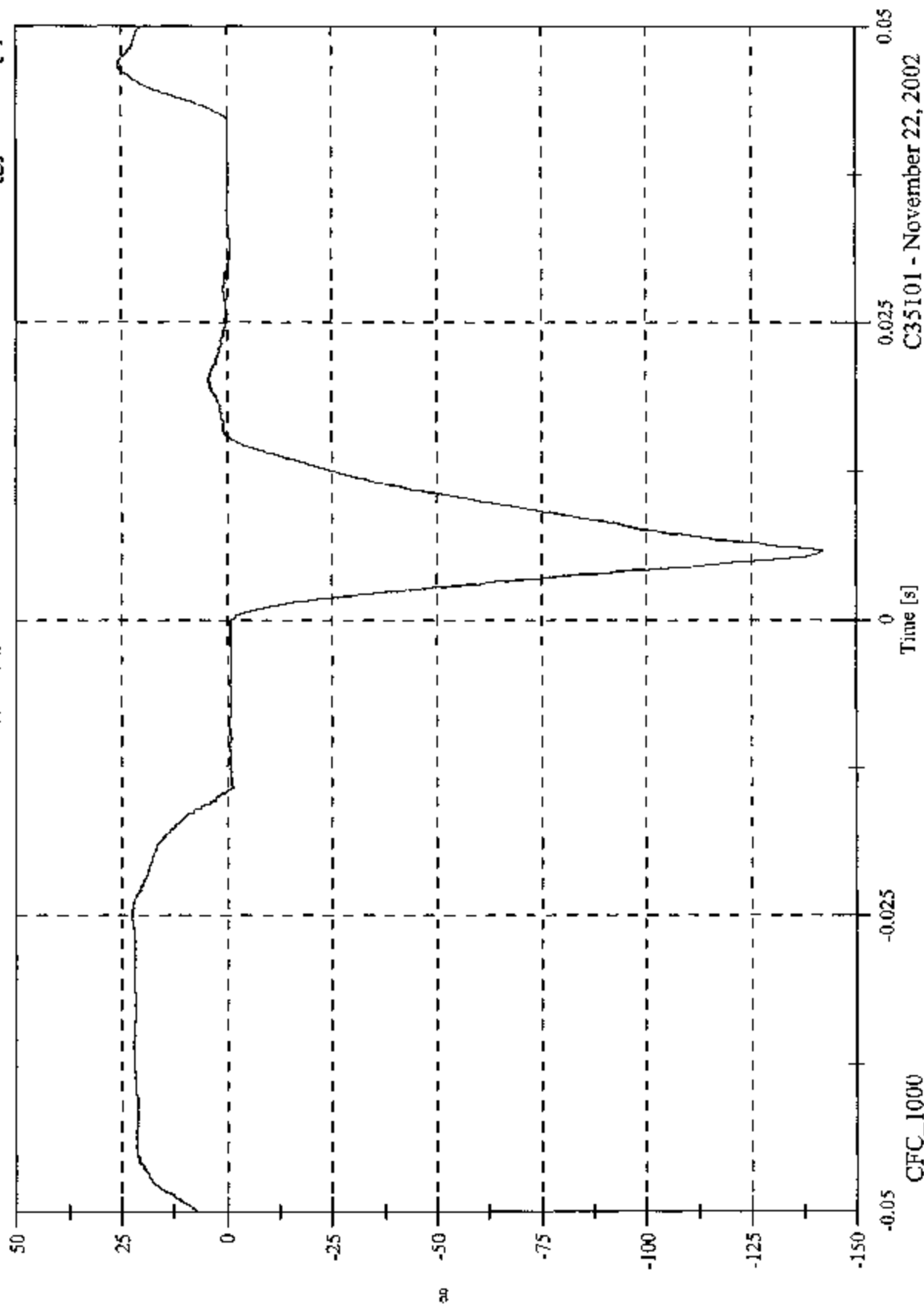
Headform Resultant

Min: 0.0 [g] at -0.096 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform X Acceleration

Max: 25.8 [g] at 0.047 [s]
Min: -141.4 [g] at 0.006 [s]

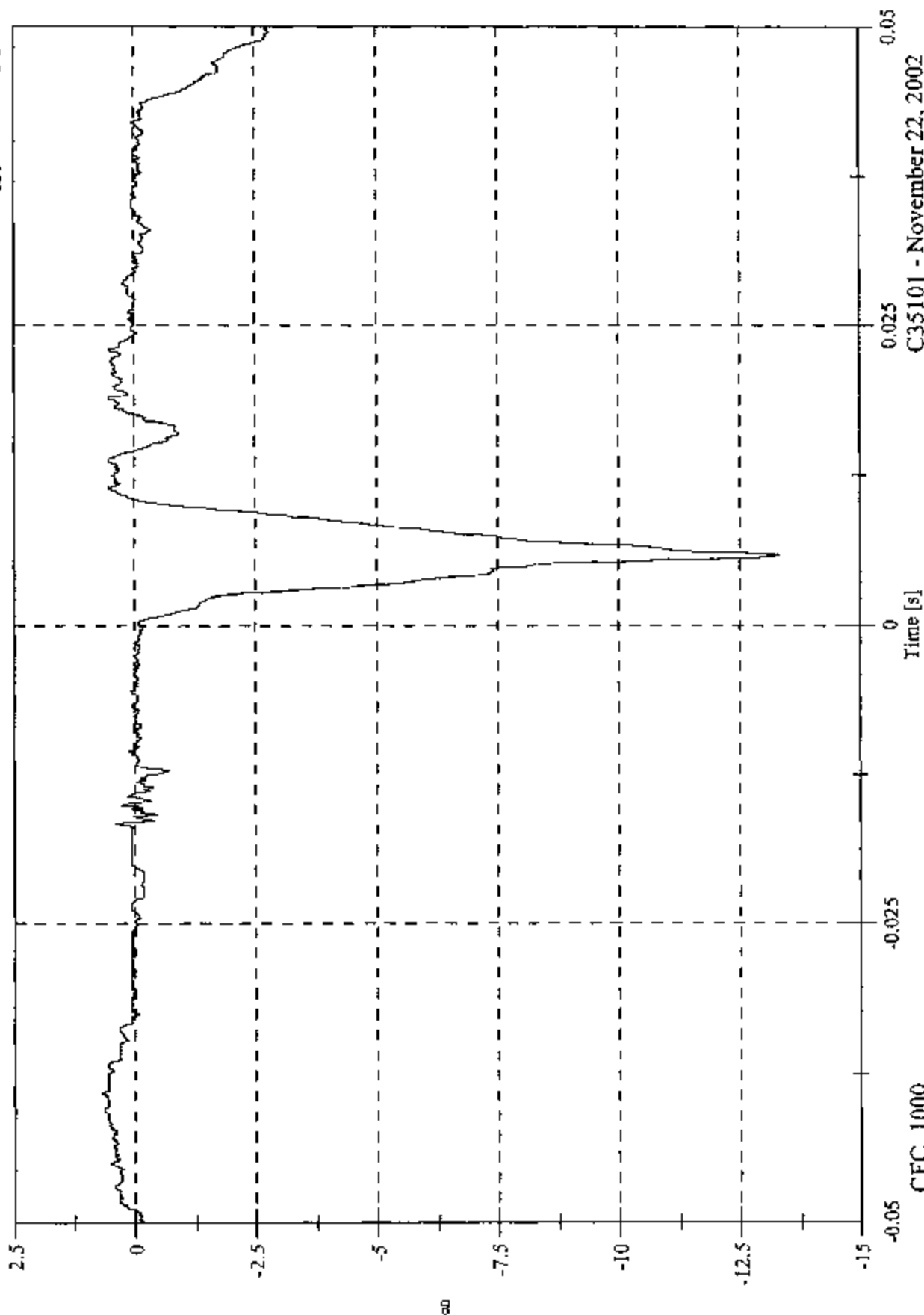


C35101 - November 22, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Max: 0.7 [g] at -0.039 [s]
Min: -13.3 [g] at 0.006 [s]

Headform Y Acceleration



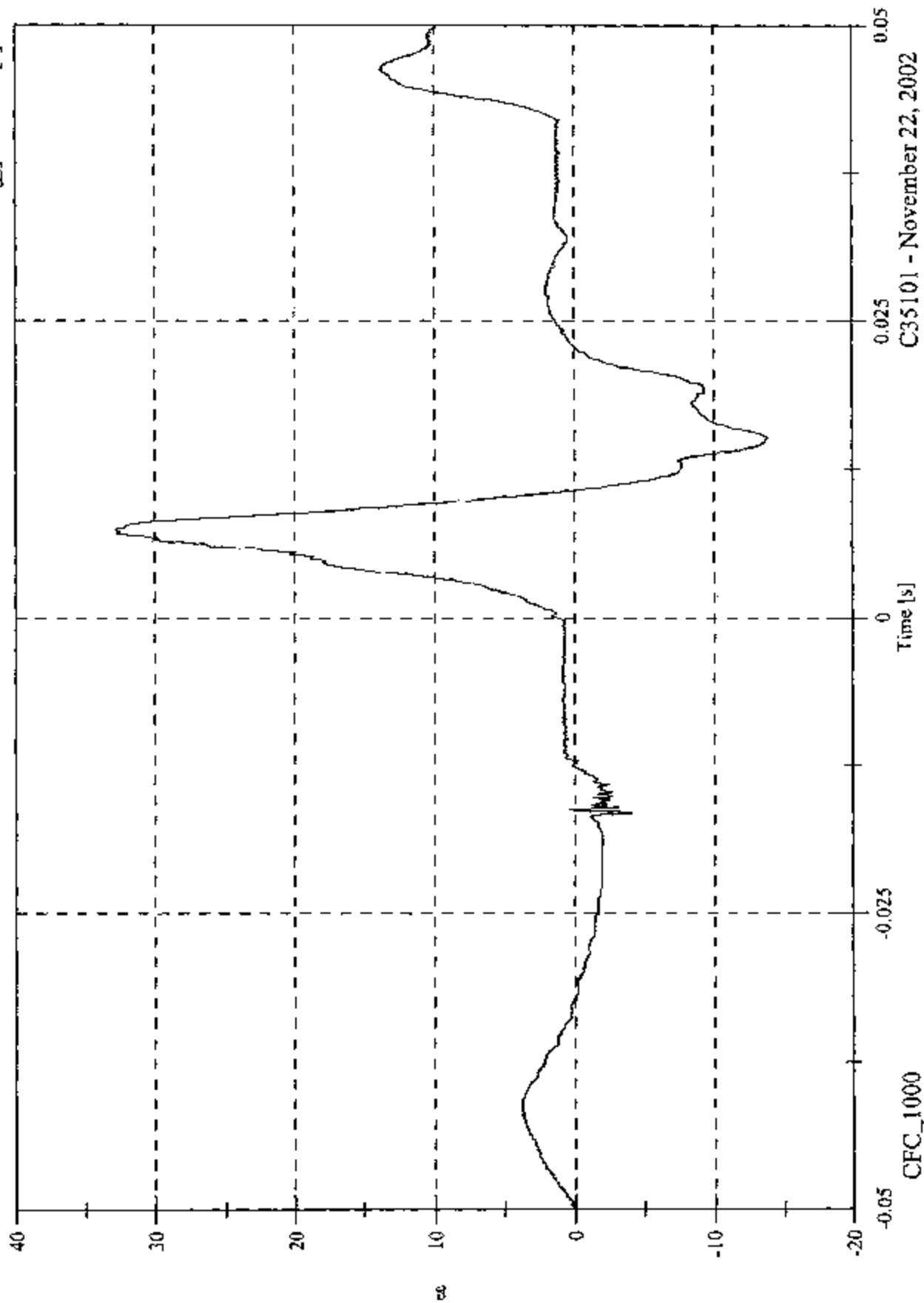
C35101 - November 22, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Max: 32.8 [g] at 0.007 [s]

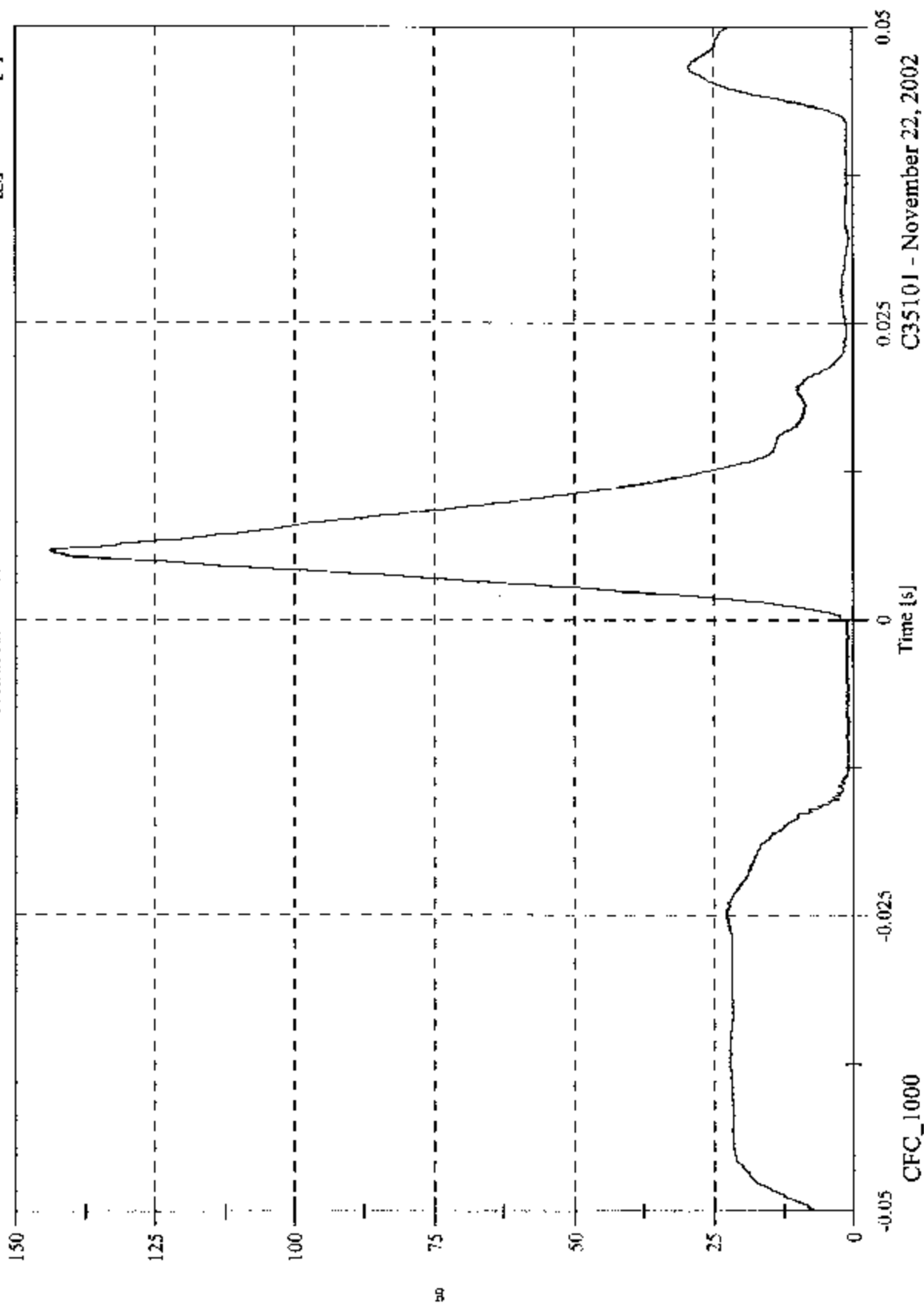
Min: -13.9 [g] at 0.015 [s]

Headform Z Acceleration



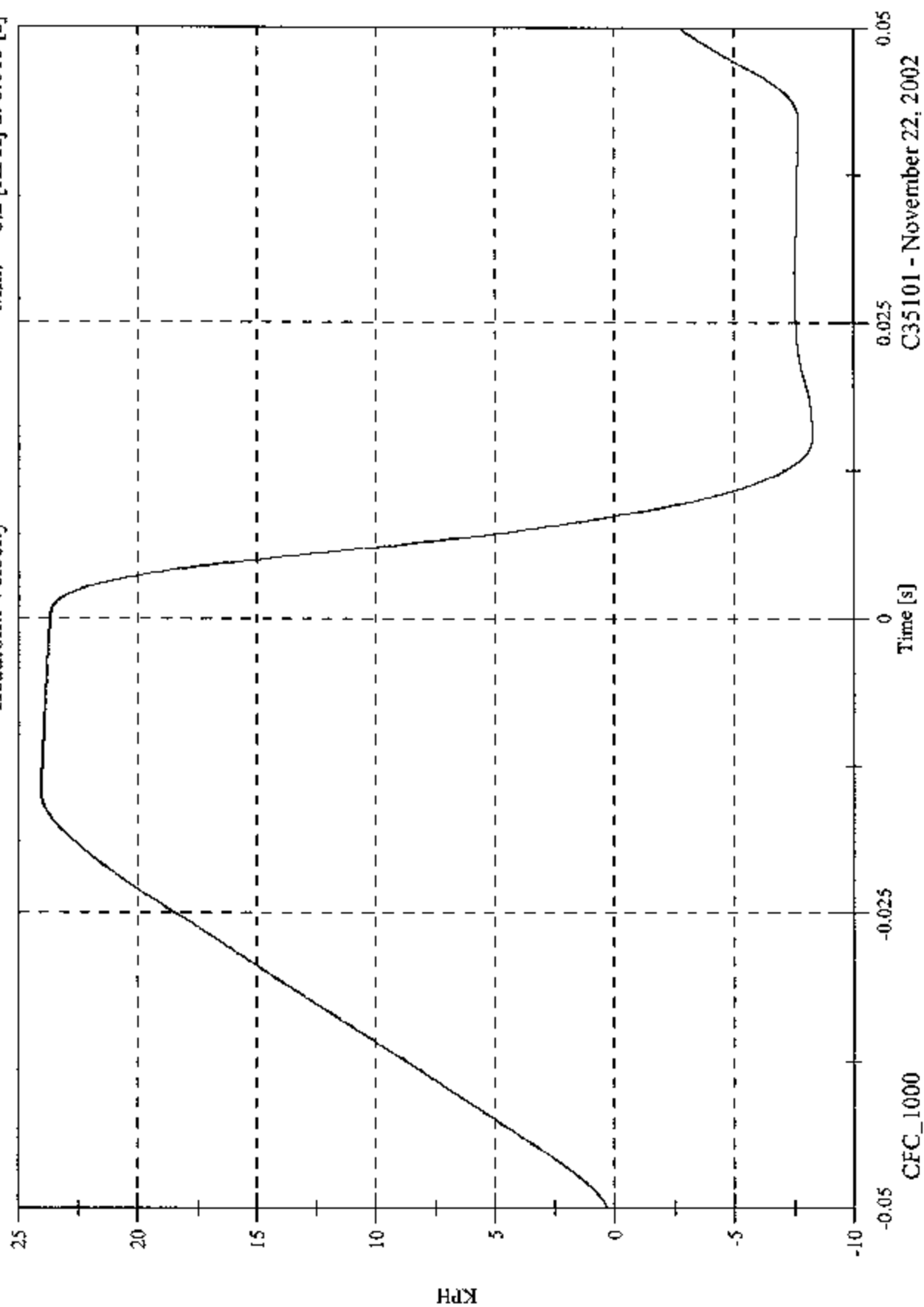
FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
 Headform Resultant

Max: 143.9 [g] at 0.006 [s]
 Min: 0.6 [g] at 0.032 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Velocity

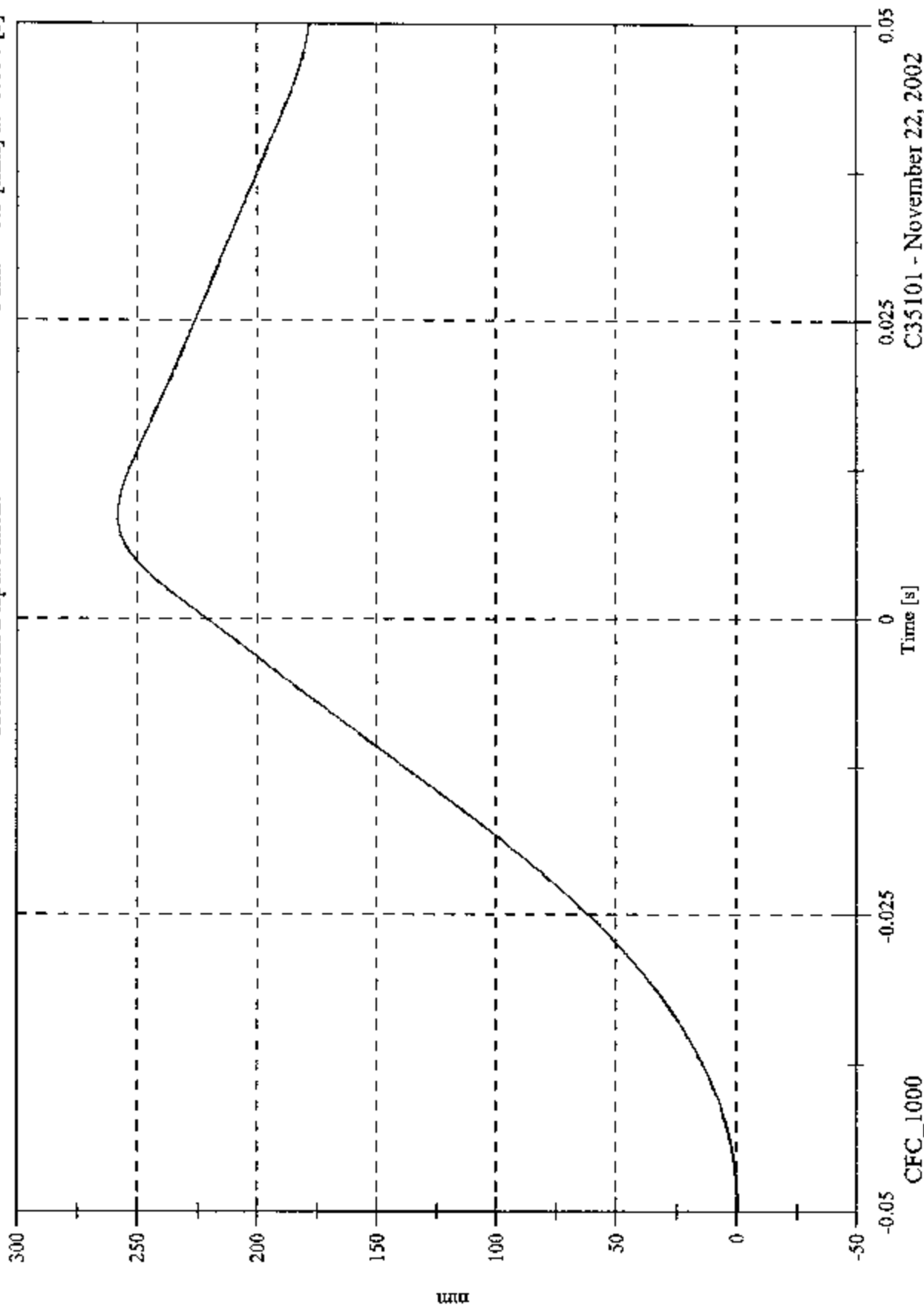
Max: 24.1 [KPH] at -0.014 [s]
Min: -8.2 [KPH] at 0.015 [s]



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Displacement

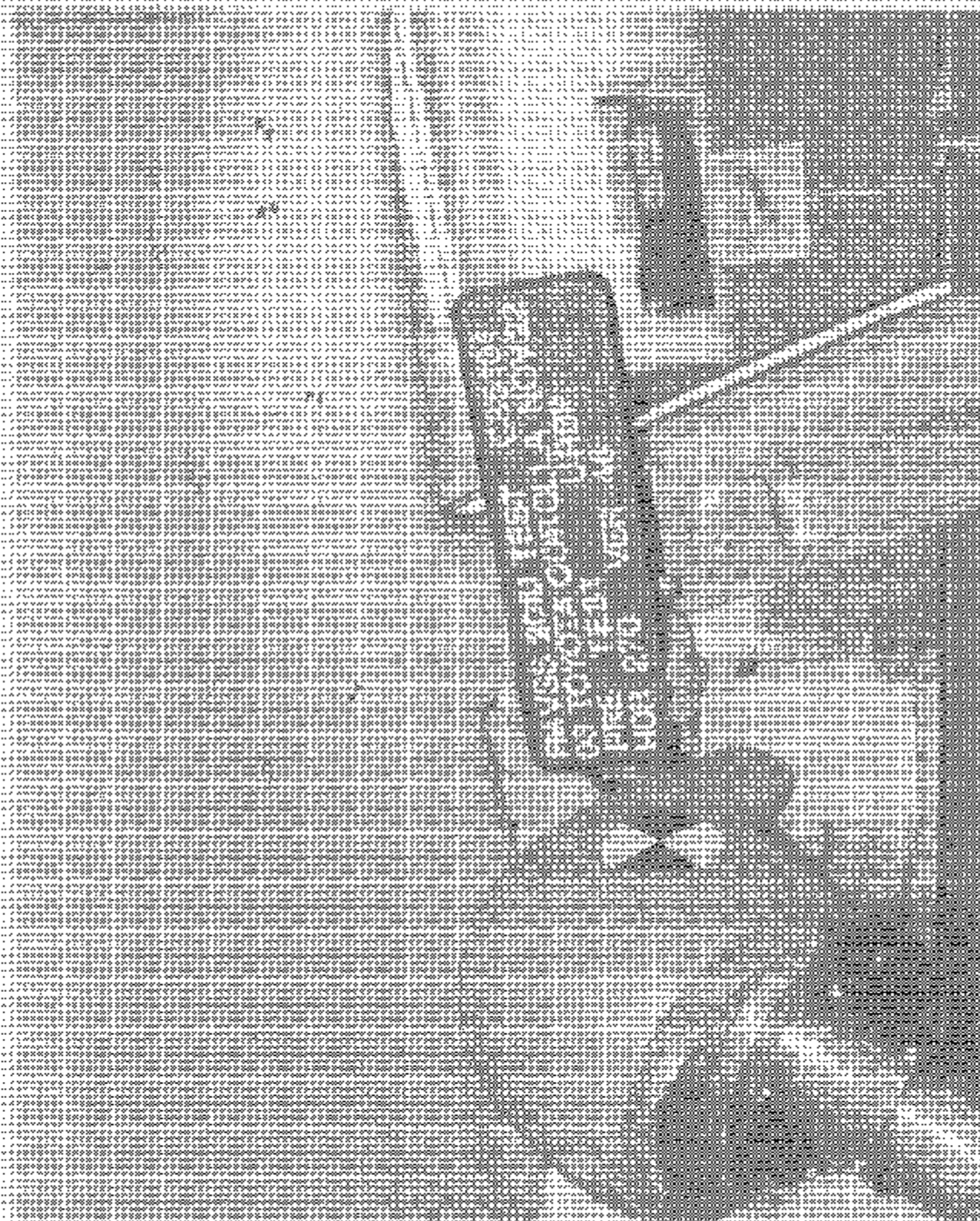
Max: 258.0 [mm] at 0.009 [s]
Min: -0.3 [mm] at -0.050 [s]

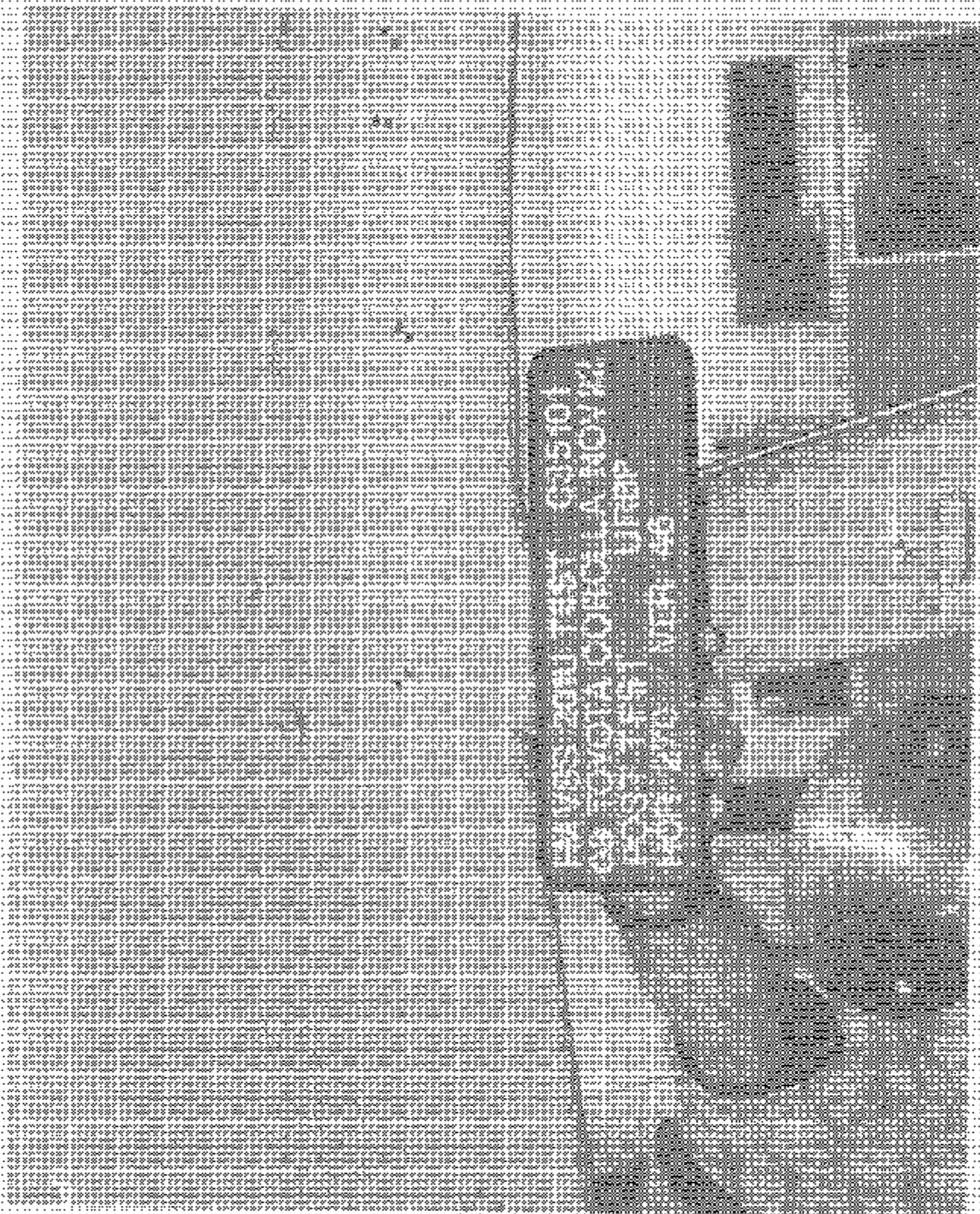


CFC_1000

Time [s]

C35101 - November 22, 2002





PM1V35 2011U TEST C35101
03 TOYOTA COROLLA NOV22
F031 TEST UHAP
F031 270 VEH 45

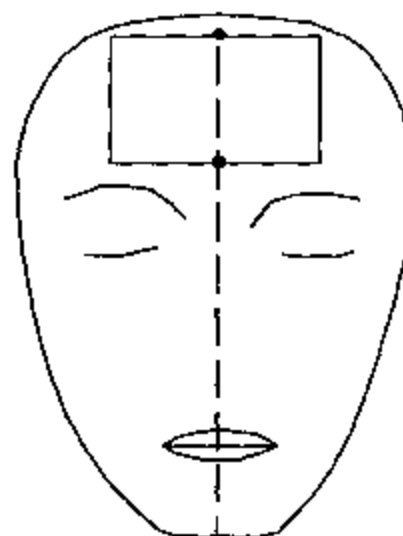
Year/Make/Model/Body Style: 2003 Toyota Corolla 4-door Sedan
 Vehicle Body Color: White VIN: 2T1BR32EX3C078949
 Vehicle NHTSA No.: C35101 Month & Year of Manufacture: Sept. 02

Test Number: 10 Test Date: 11/22/02
 Target Location: DRIVER SIDE SIDE RAIL Target Code: SR1
 Horizontal Impact Angle: 270 ° Vertical Impact Angle: 22°
 Ambient Temperature: 20 °C Time of Impact: 11:30
 Headform Number: 0542

Impact Point:

Description:

Description: From lower midpoint				
On centerline	20	mm up		
On centerline	2	x	mm right	- mm left



Free Motion HIC: 511.0 HIC(d): 551.9
 Impact Velocity (kph): 23.54 HIC1: 1.9 msec HIC2: 12.3 msec

Post-Test Comments:

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan C35101 - SR1

FMH Headform 0642

Location: SR1

Test Date: November 22, 2002

Work File: SR1

TEST RESULTS

Lab Temperature: 20 C

HICd: 551.9

Lab Humidity: 32 %

HIC (36ms): 511.0

Velocity at Impact: 23.54 KPH

t1: 2.9 msec

t2: 12.3 msec

Free Flight Distance: 212.02 mm

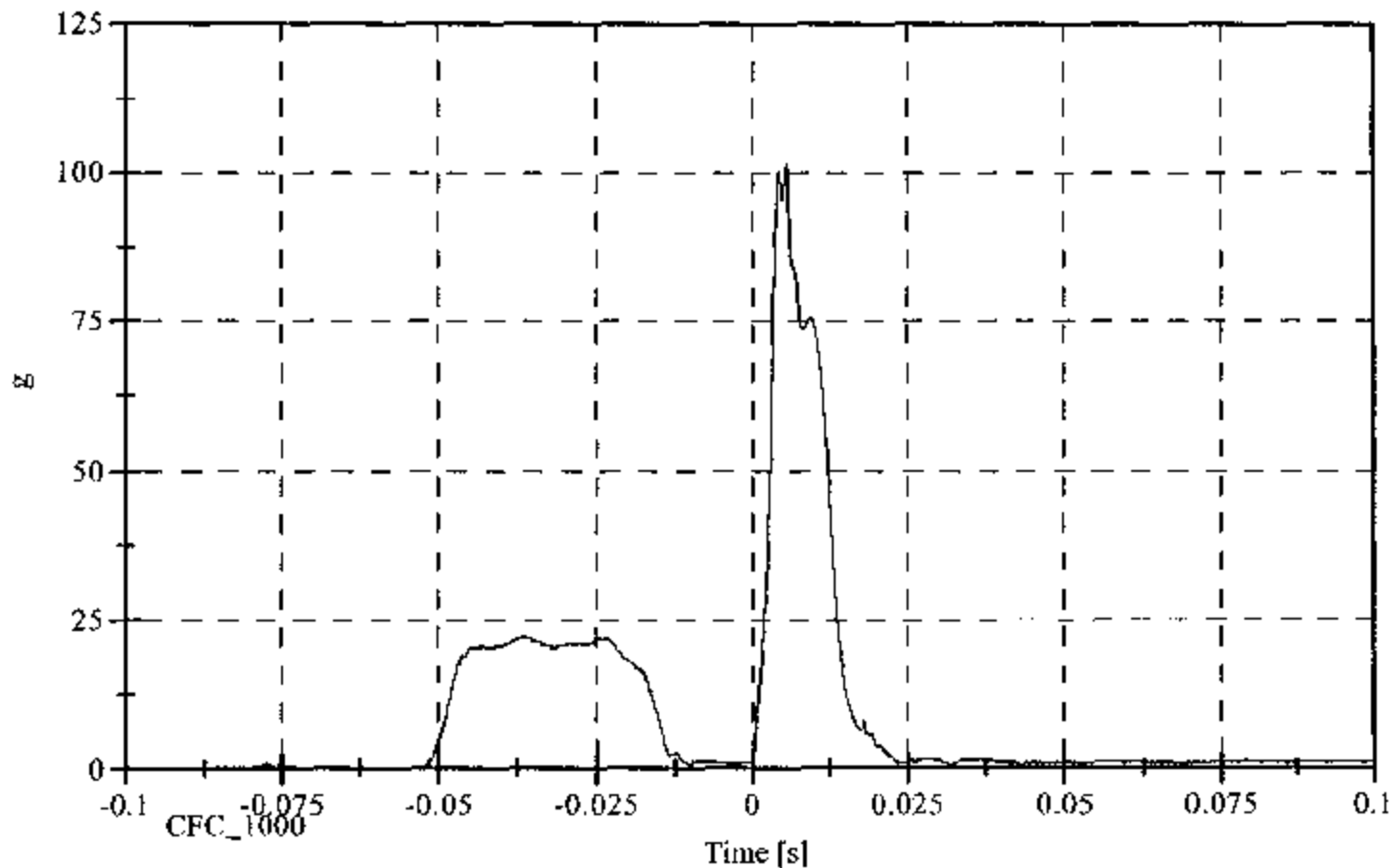
Duration: 9.5 msec

Average Acceleration: 8.5 g

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant

Max: 101.5 [g] at 0.006 [s]

Min: 0.0 [g] at -0.066 [s]

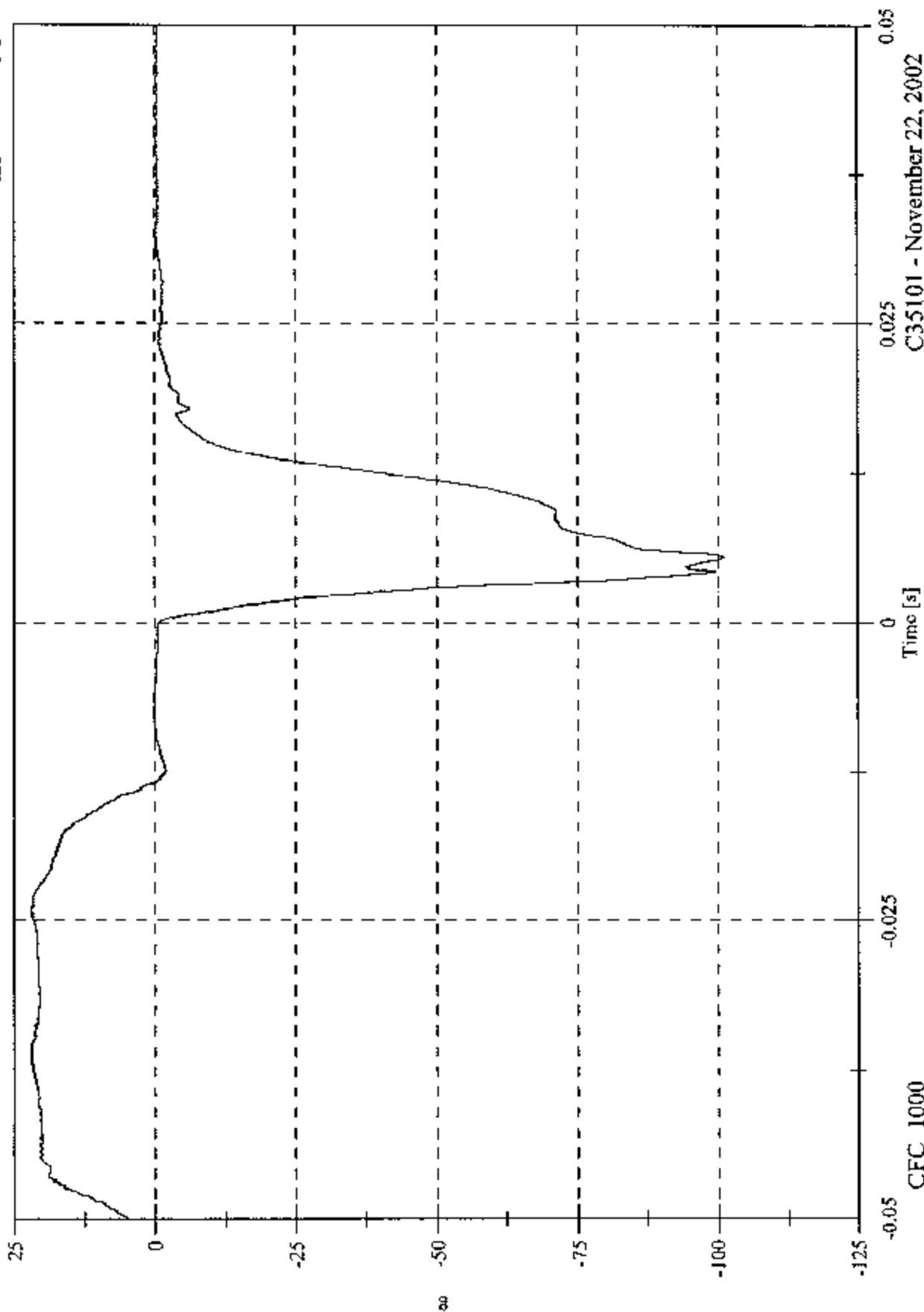


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform X Acceleration

Max: 22.1 [g] at -0.037 [s]

Min: -101.1 [g] at 0.006 [s]



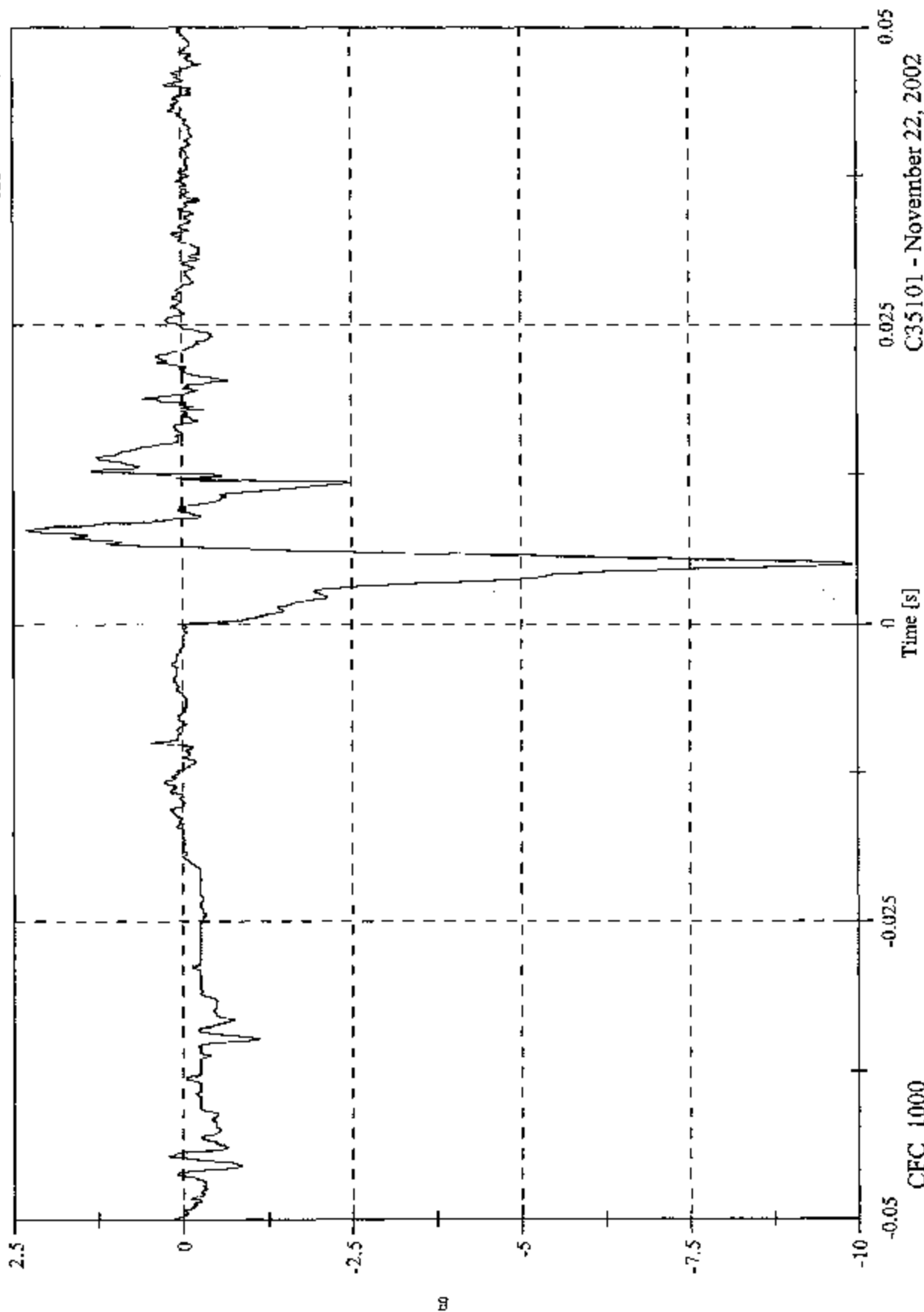
CFC_1000

Time [s]

C35101 - November 22, 2002

FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
 Headform Y Acceleration

Max: 2.3 [g] at 0.008 [s]
 Min: -9.9 [g] at 0.005 [s]

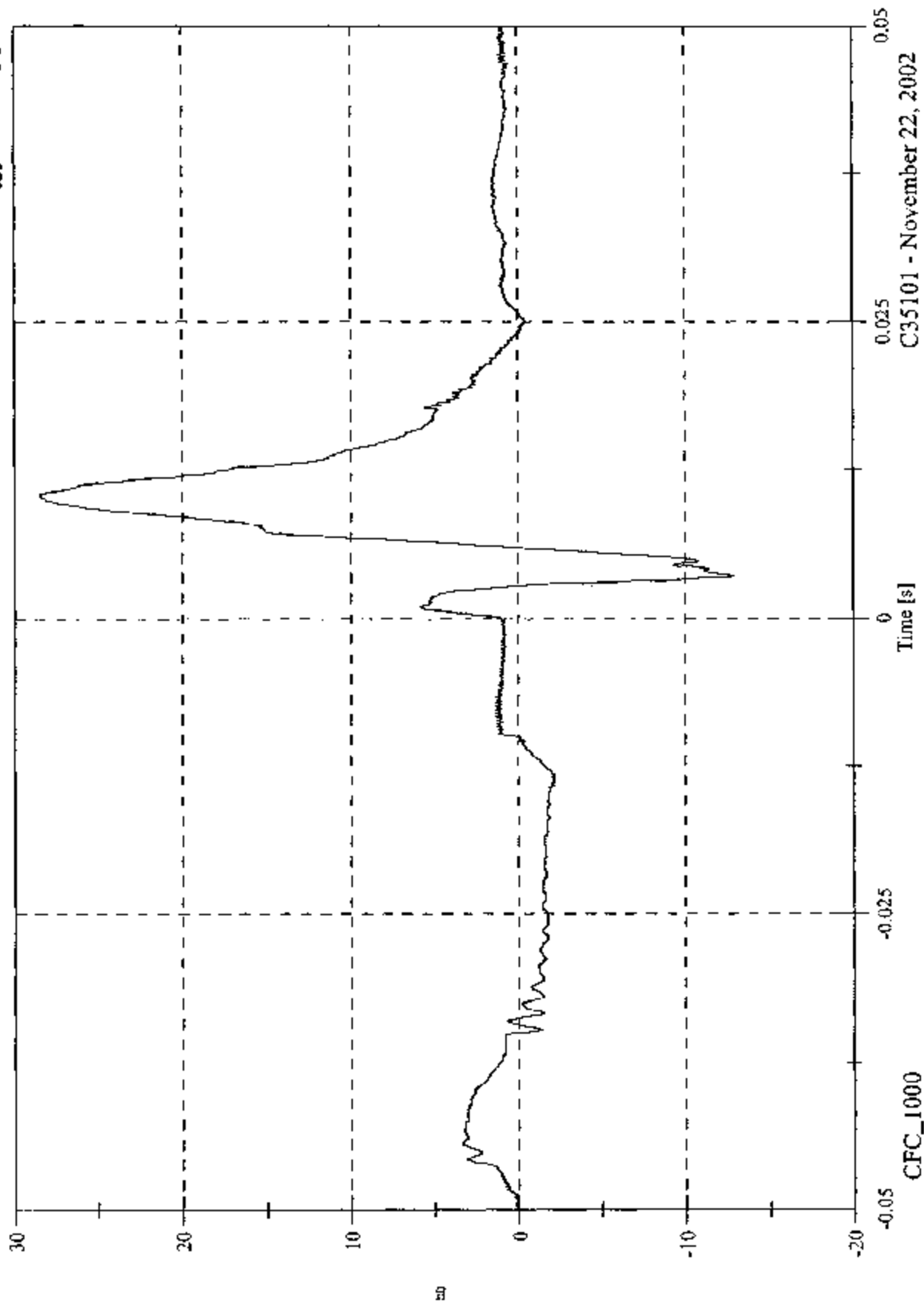


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

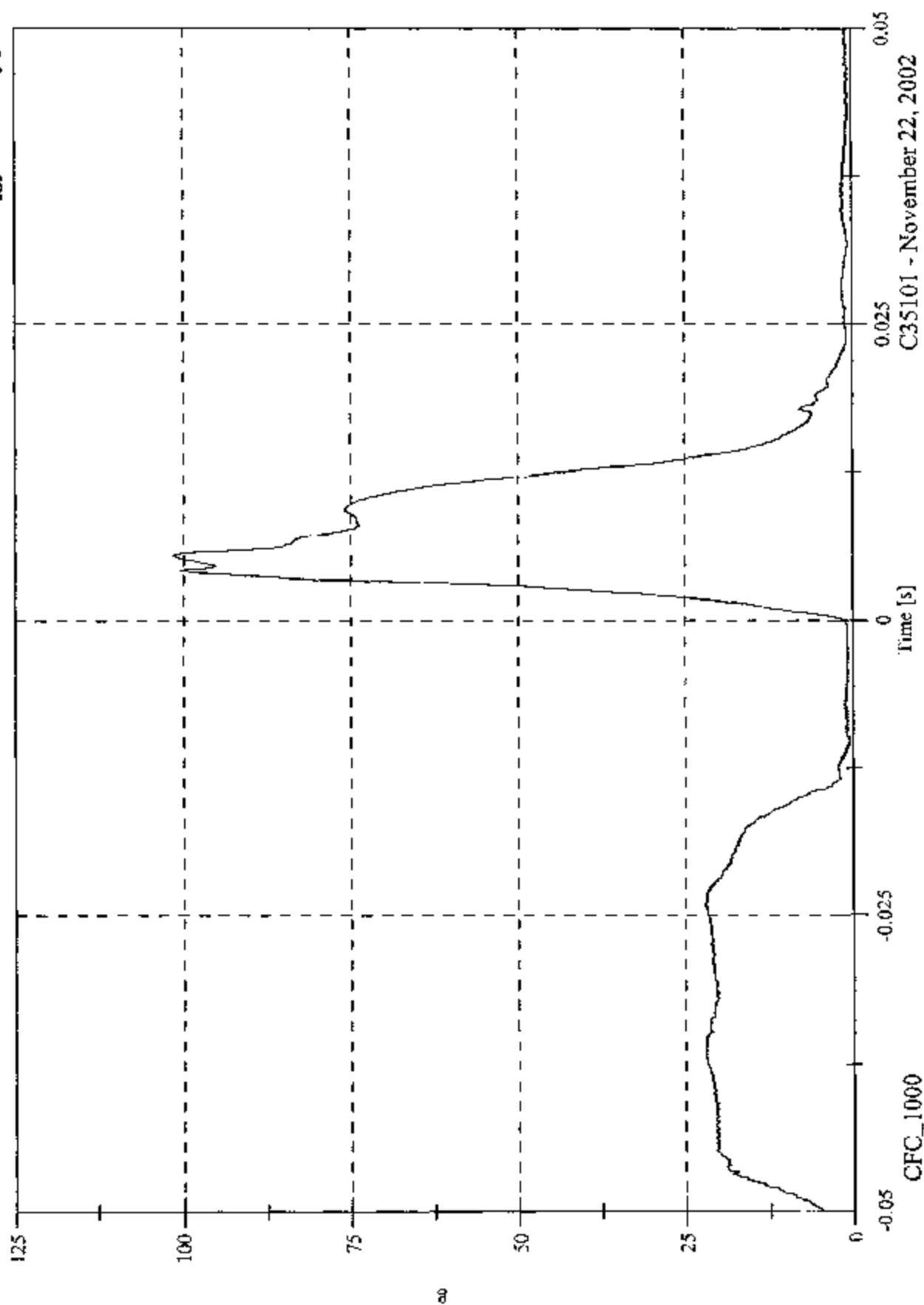
Max: 28.5 [g] at 0.010 [s]

Min: -12.8 [g] at 0.004 [s]

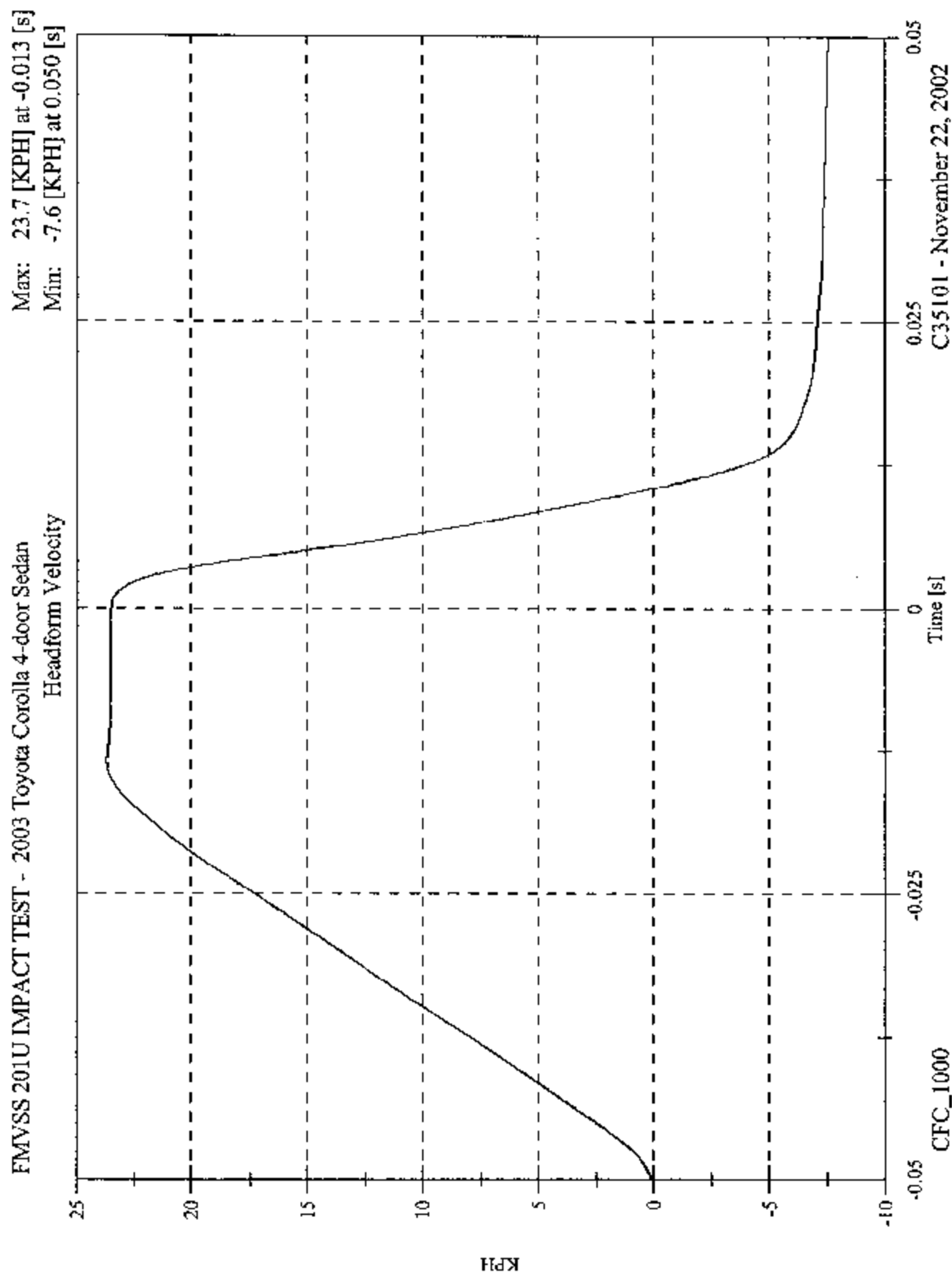
Headform Z Acceleration



FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan
Headform Resultant
Max: 101.5 [g] at 0.006 [s]
Min: 0.5 [g] at -0.010 [s]



C35101 SRI IMPACT PLOT #4

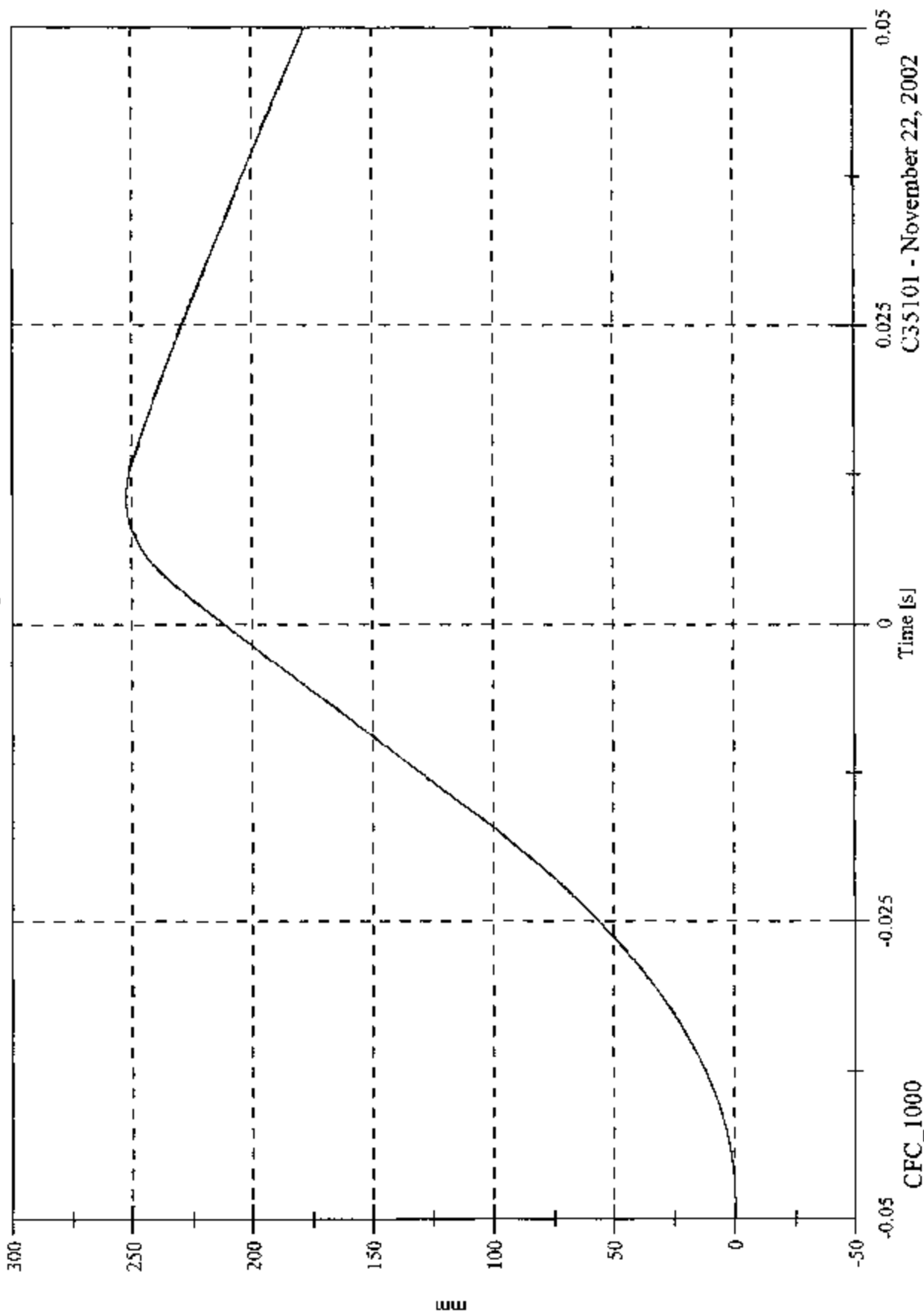


FMVSS 201U IMPACT TEST - 2003 Toyota Corolla 4-door Sedan

Headform Displacement

Max: 252.5 [mm] at 0.011 [s]

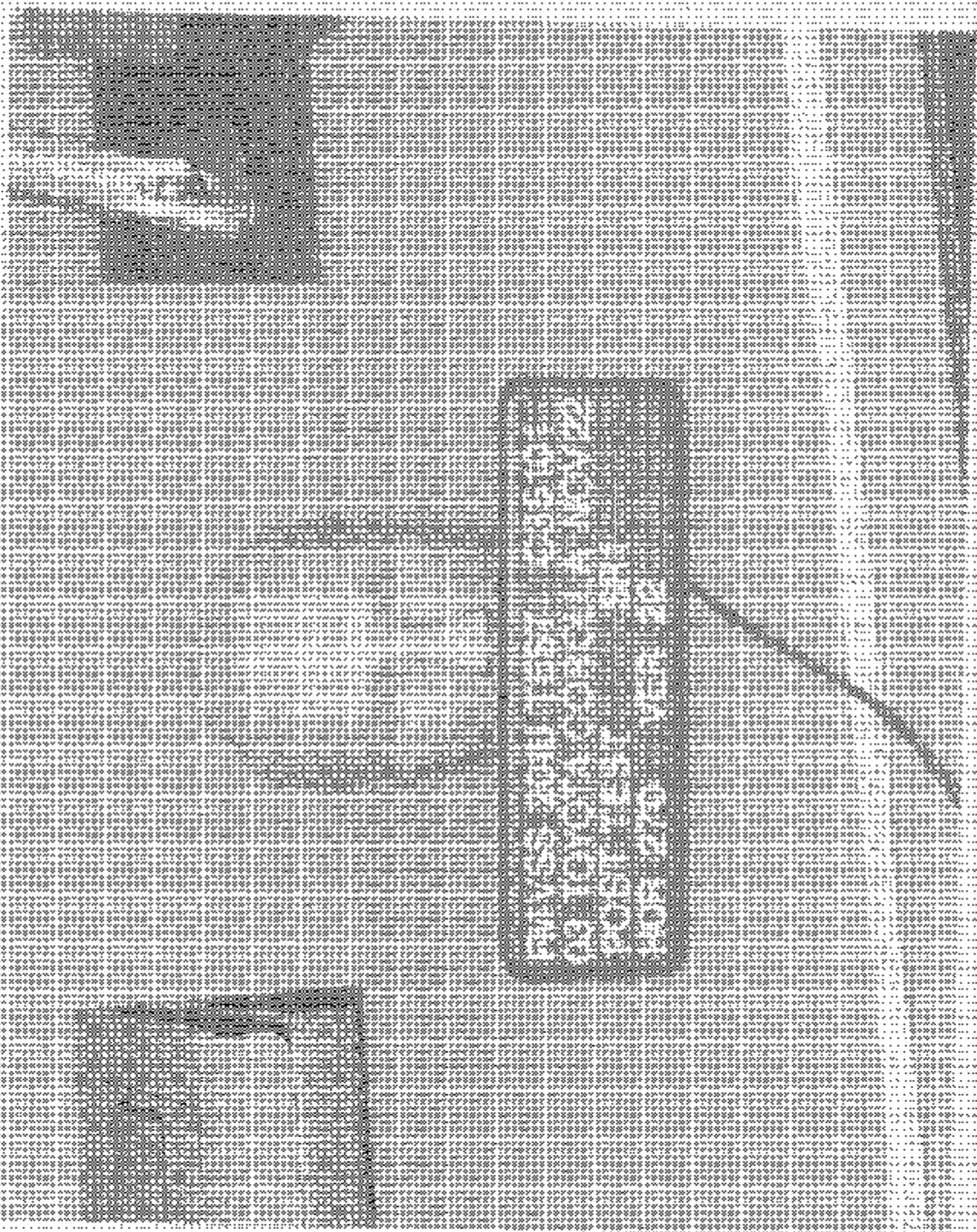
Min: -0.2 [mm] at -0.050 [s]



C35101 - November 22, 2002

HAUSS 2001 TEST C36301
03 HOYOLA COROCLA NOV22
PRE TEST SAI
HAHN 270 VEH 22

THE
FEDERAL
BUREAU
OF
INVESTIGATION
OF
THE
DEPARTMENT
OF
JUSTICE



THE
JOURNAL OF
THE
ROYAL ANTHROPOLOGICAL INSTITUTE
OF GREAT BRITAIN AND IRELAND
VOLUME 100 PART 1 2000

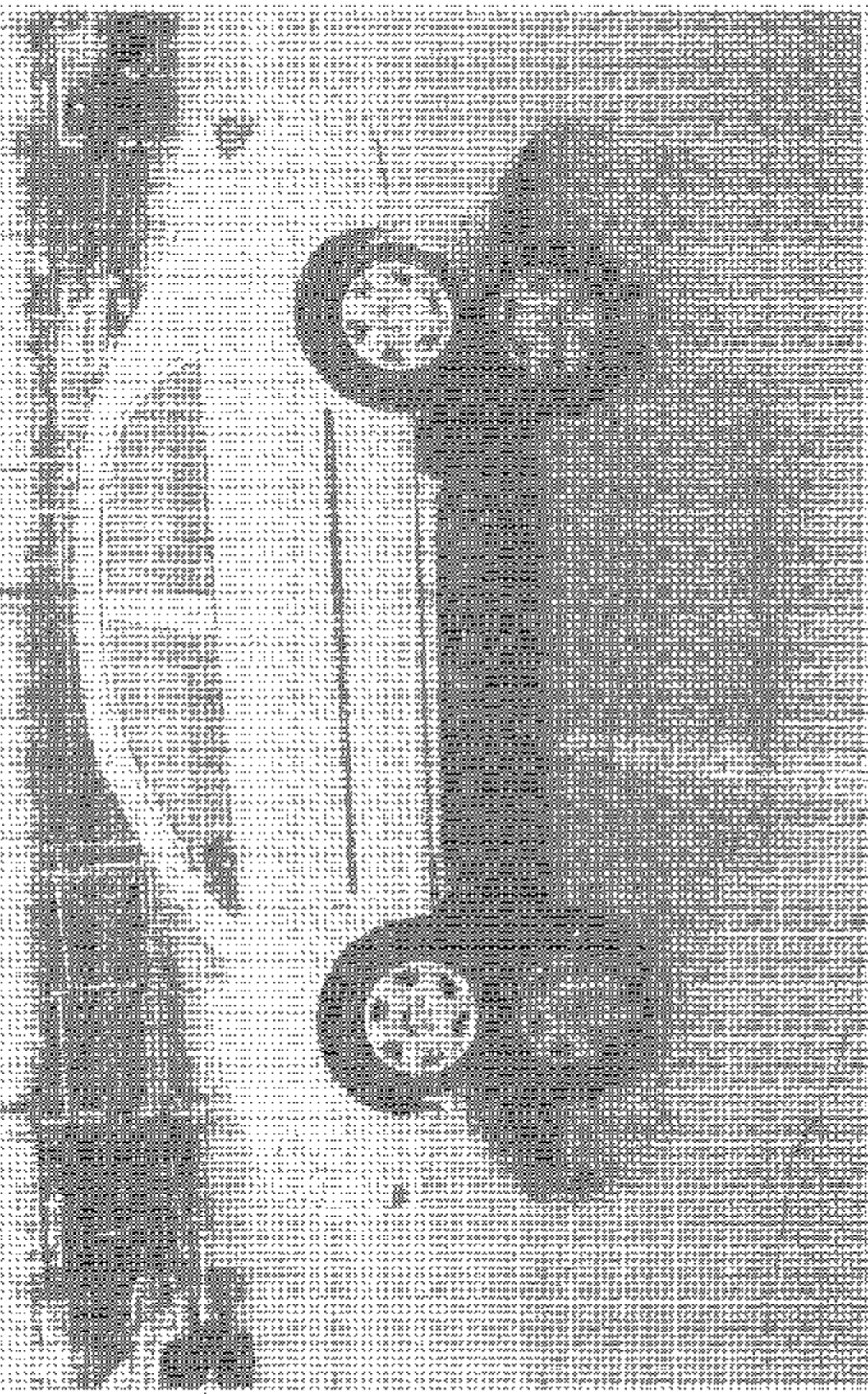
APPENDIX A

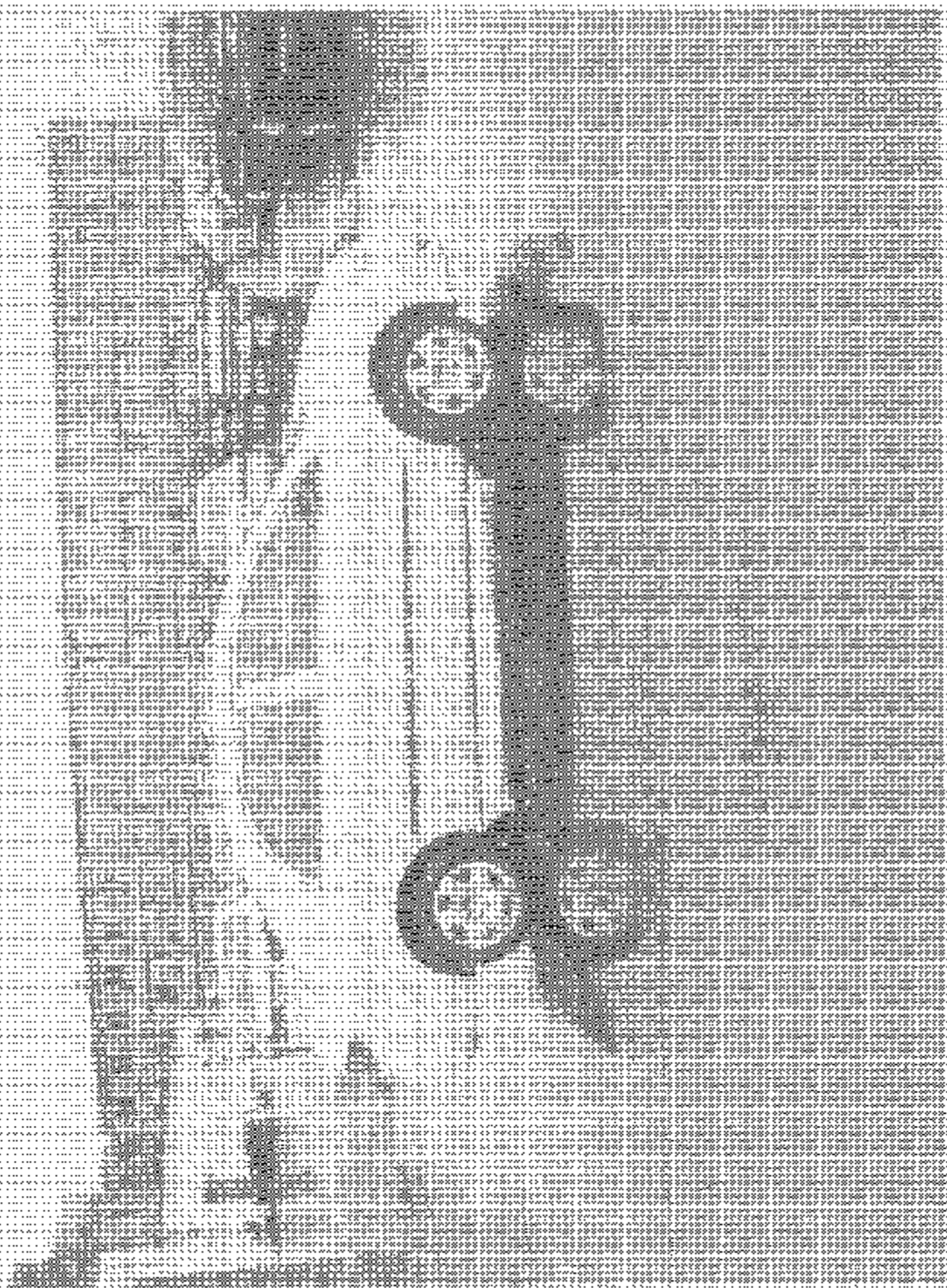
PHOTOGRAPHS

PHOTOGRAPHS

FIGUREVIEW

A-1	LEFT SIDE VIEW OF VEHICLE
A-2	RIGHT SIDE VIEW OF VEHICLE
A-3	3/4 FRONTAL VIEW FROM LEFT SIDE OF VEHICLE
A-4	3/4 REAR VIEW FROM RIGHT SIDE OF VEHICLE
A-5	VEHICLE'S CERTIFICATION LABEL
A-6	VEHICLE'S TIRE INFORMATION LABEL
A-7	PRE-TEST DRIVER SIDE A-PILLAR
A-8	PRE-TEST DRIVER SIDE FRONT HEADER
A-9	PRE-TEST DRIVER SIDE SIDE RAIL
A-10	PRE-TEST DRIVER SIDE B-PILLAR
A-11	PRE-TEST DRIVER SIDE REAR PILLAR
A-12	PRE-TEST PASSENGER SIDE A-PILLAR
A-13	PRE-TEST PASSENGER SIDE FRONT HEADER
A-14	PRE-TEST PASSENGER SIDE SIDE RAIL
A-15	PRE-TEST PASSENGER SIDE B-PILLAR
A-16	PRE-TEST PASSENGER SIDE REAR PILLAR
A-17	POST-TEST DRIVER SIDE A-PILLAR
A-18	POST-TEST DRIVER SIDE FRONT HEADER
A-19	POST-TEST DRIVER SIDE SIDE RAIL
A-20	POST-TEST DRIVER SIDE B-PILLAR
A-21	POST-TEST DRIVER SIDE REAR PILLAR
A-22	POST-TEST PASSENGER SIDE A-PILLAR
A-23	POST-TEST PASSENGER SIDE FRONT HEADER
A-24	POST-TEST PASSENGER SIDE SIDE RAIL
A-25	POST-TEST PASSENGER SIDE B-PILLAR
A-26	POST-TEST PASSENGER SIDE REAR PILLAR





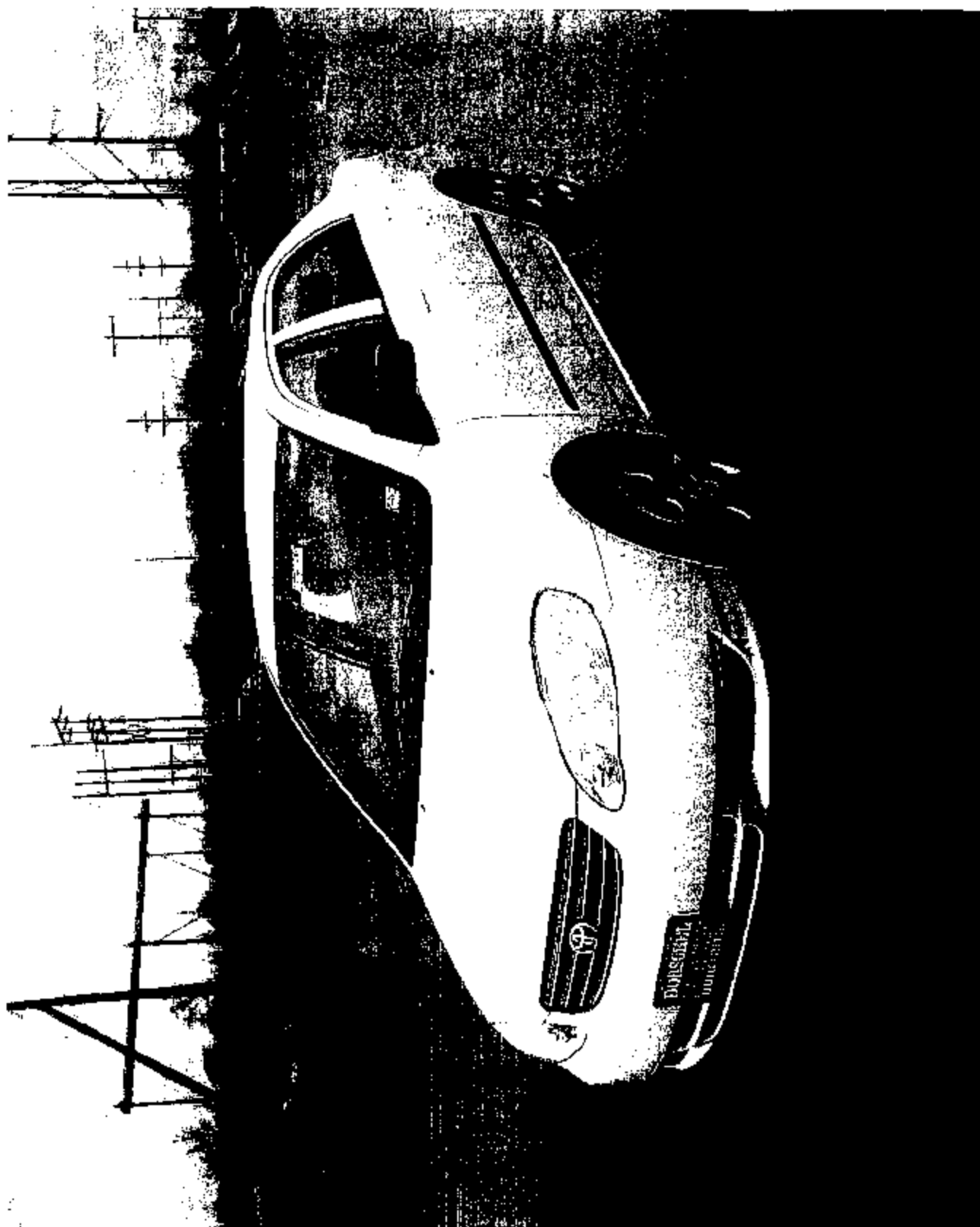


Figure A-3: 3/4 FRONTAL VIEW FROM LEFT SIDE OF VEHICLE



Figure A-4: 3/4 REAR VIEW FROM RIGHT SIDE OF VEHICLE

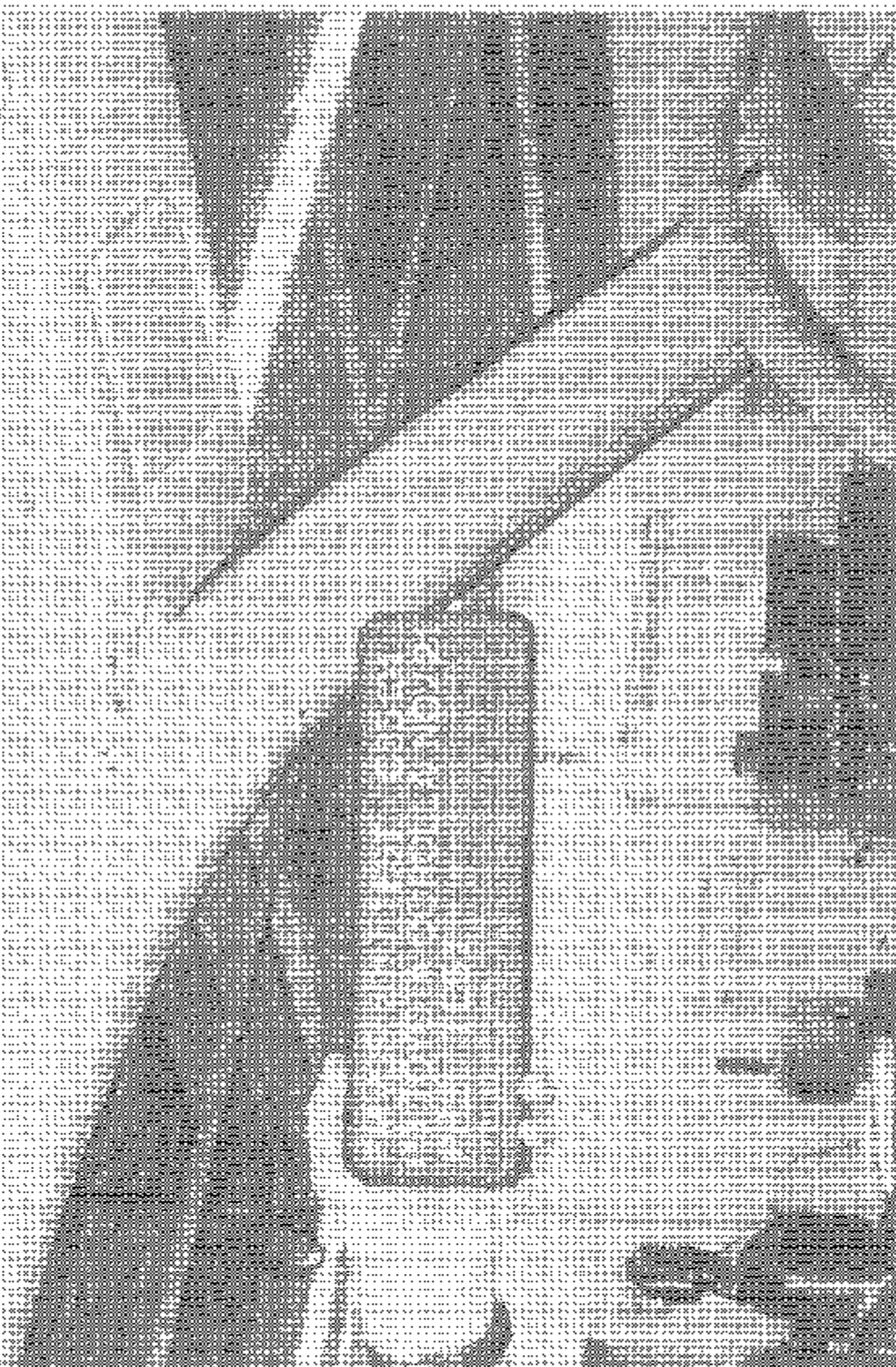
MFD. BY: TOYOTA MOTOR MANUFACTURING
CANADA INC. 09/02
GVWR 3585LB GAWR FR 1885LB RR 1720LB
THIS VEHICLE CONFORMS TO ALL APPLICABLE
FEDERAL MOTOR VEHICLE SAFETY BUMPER AND
THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE. PASS. CAR
2T1BR32EX3C078949

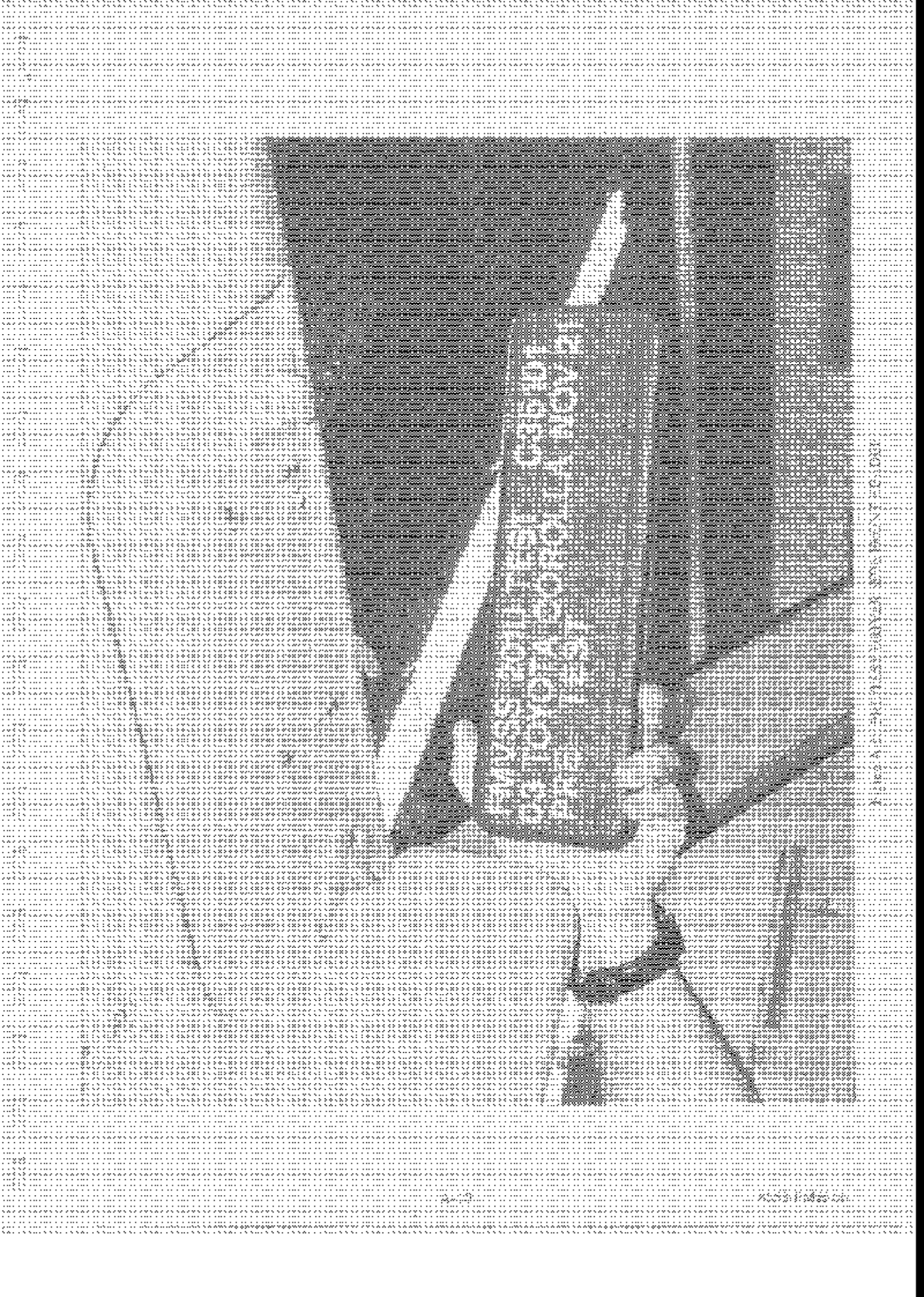


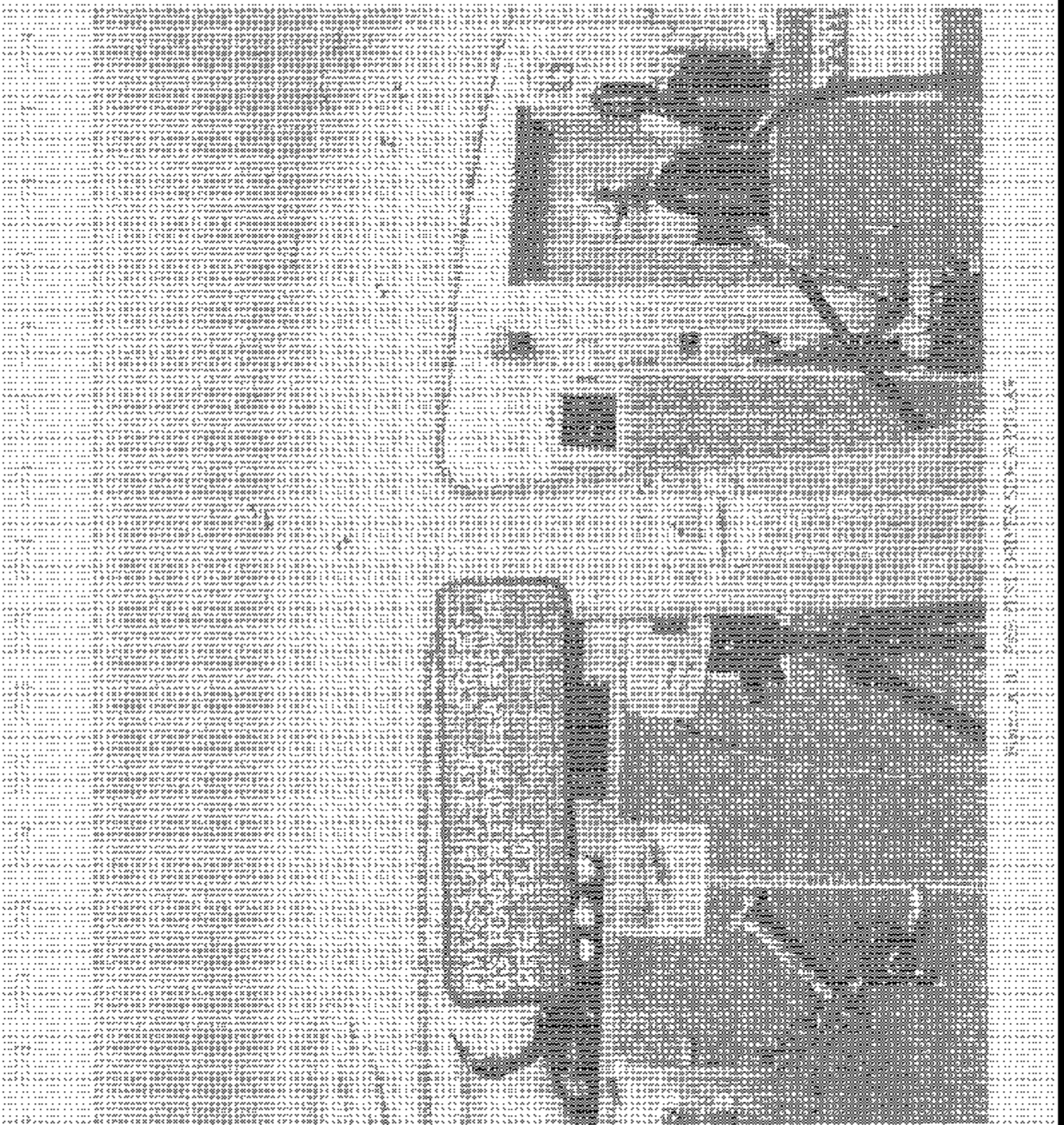
C/TR: 040/FB11
A/TM: -01A/C59
MODEL: ZZE130L - DEMDKA
MADE IN CANADA

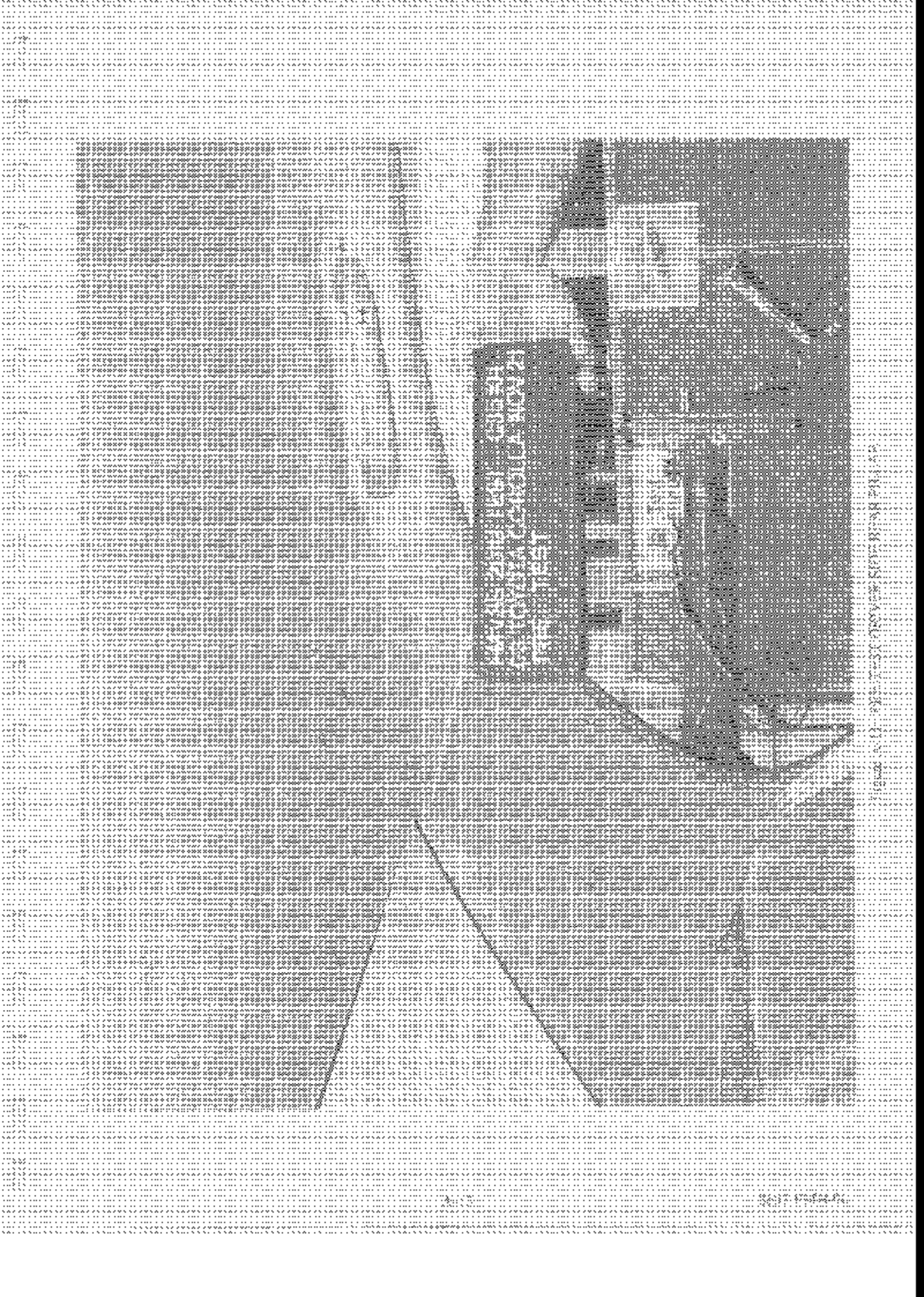
099

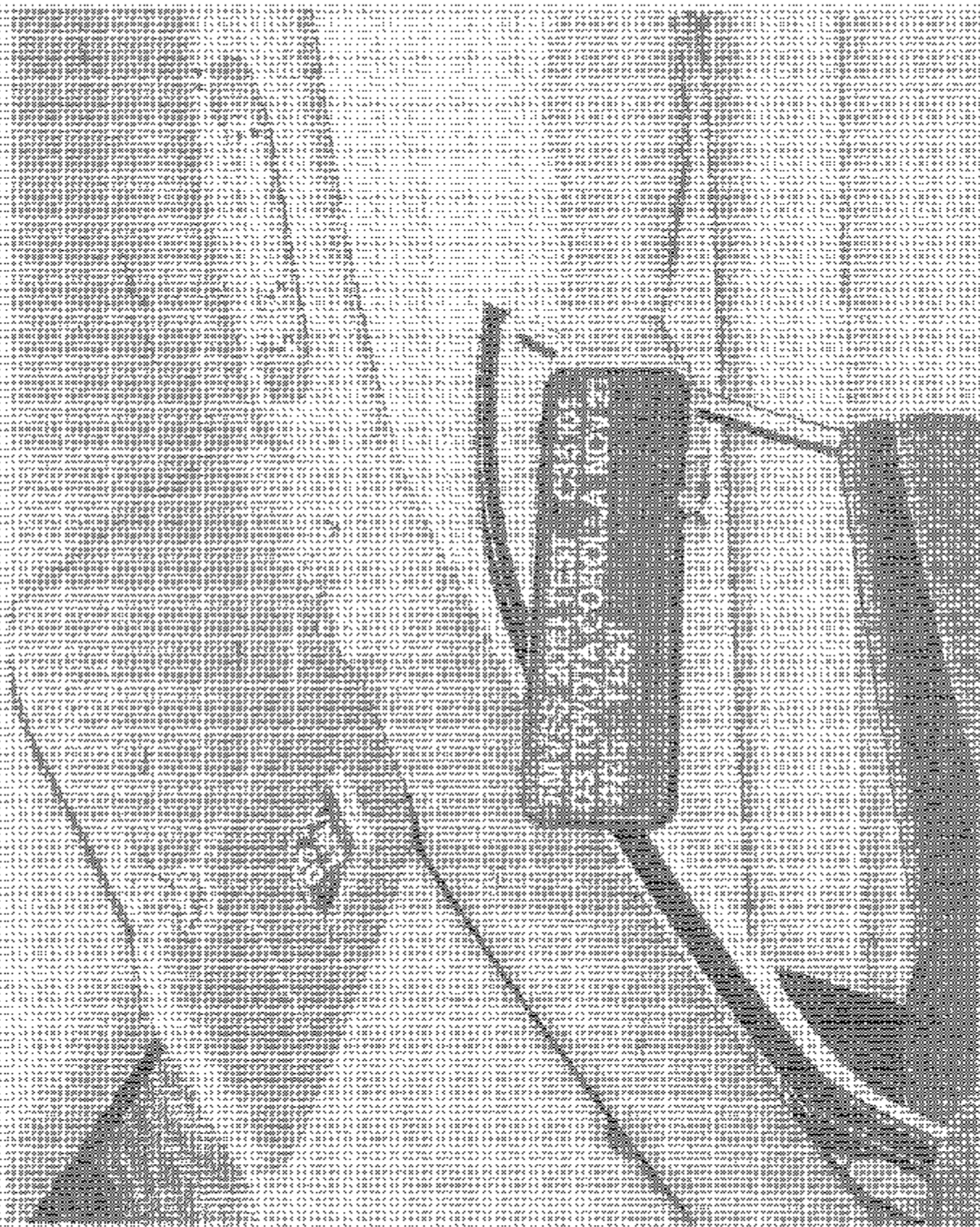
Figure A-5: VEHICLE'S CERTIFICATION LABEL.

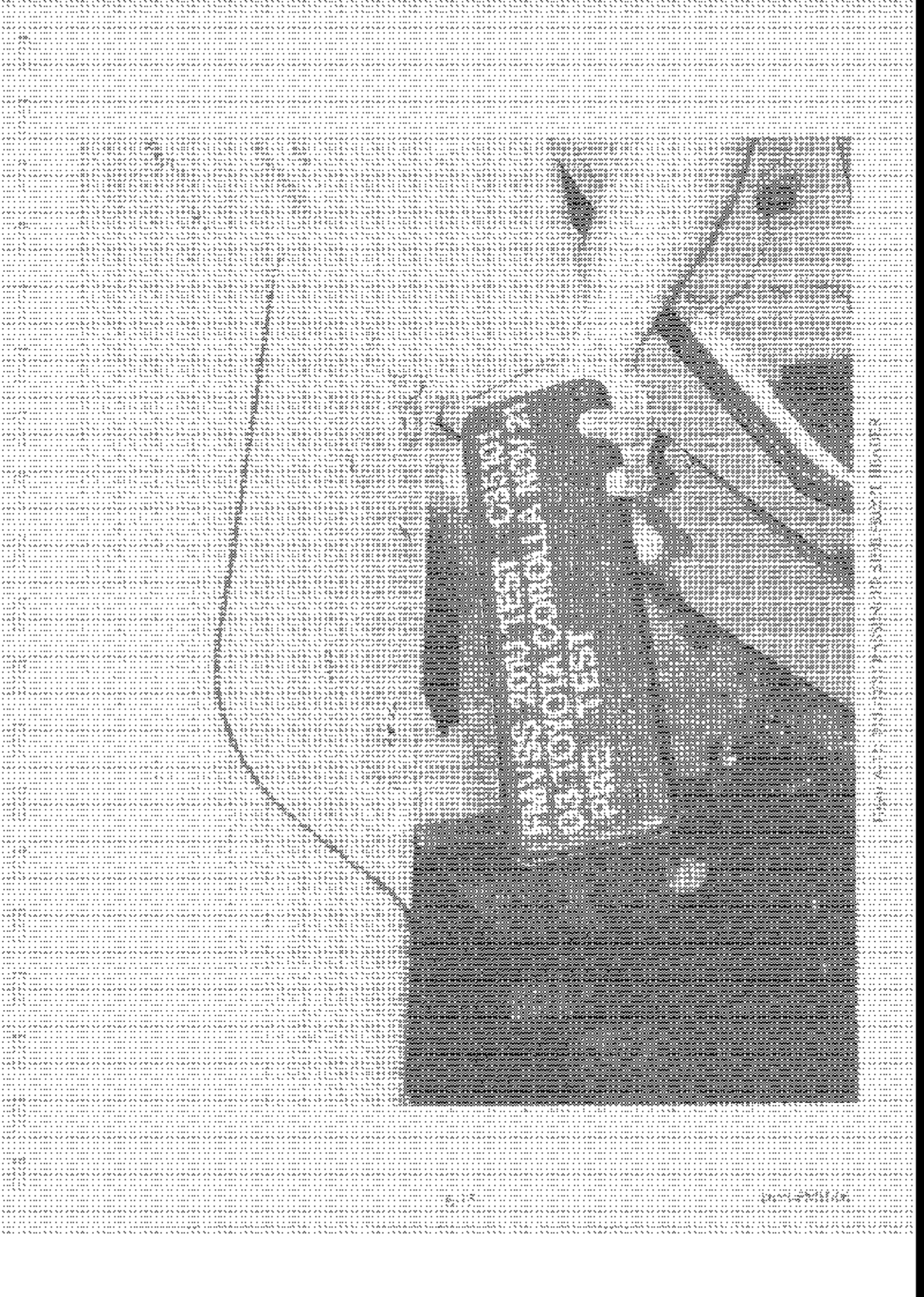


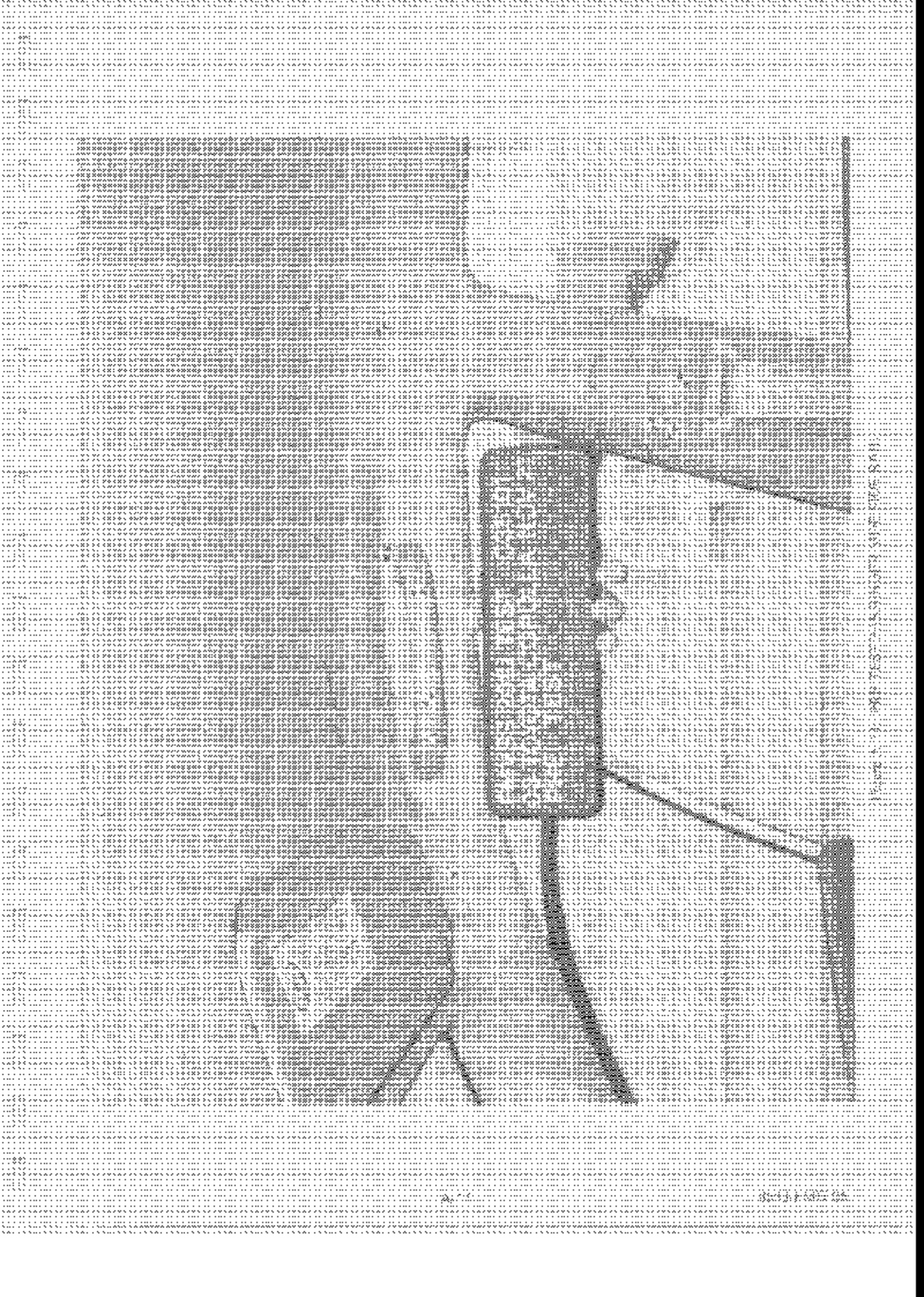




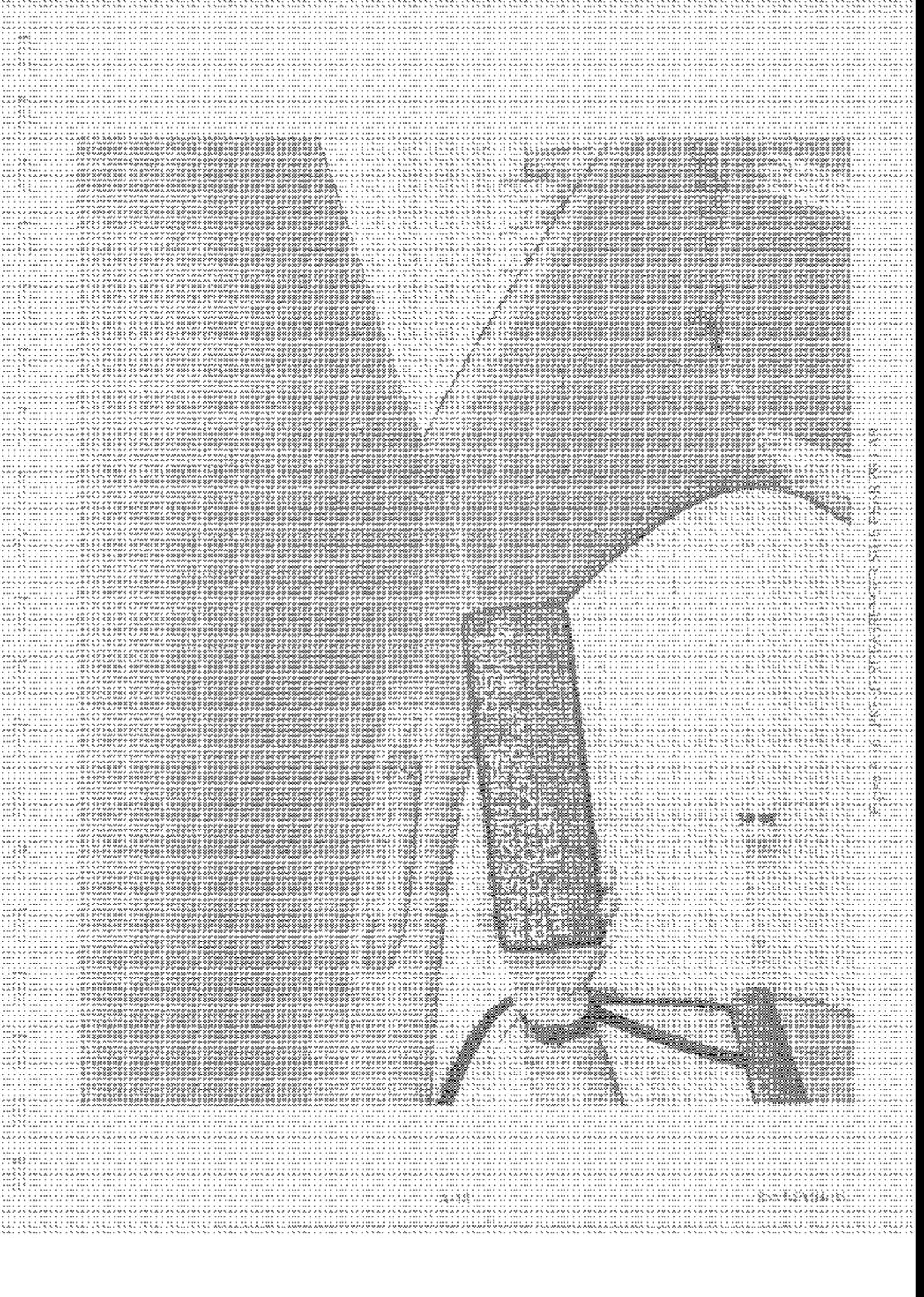


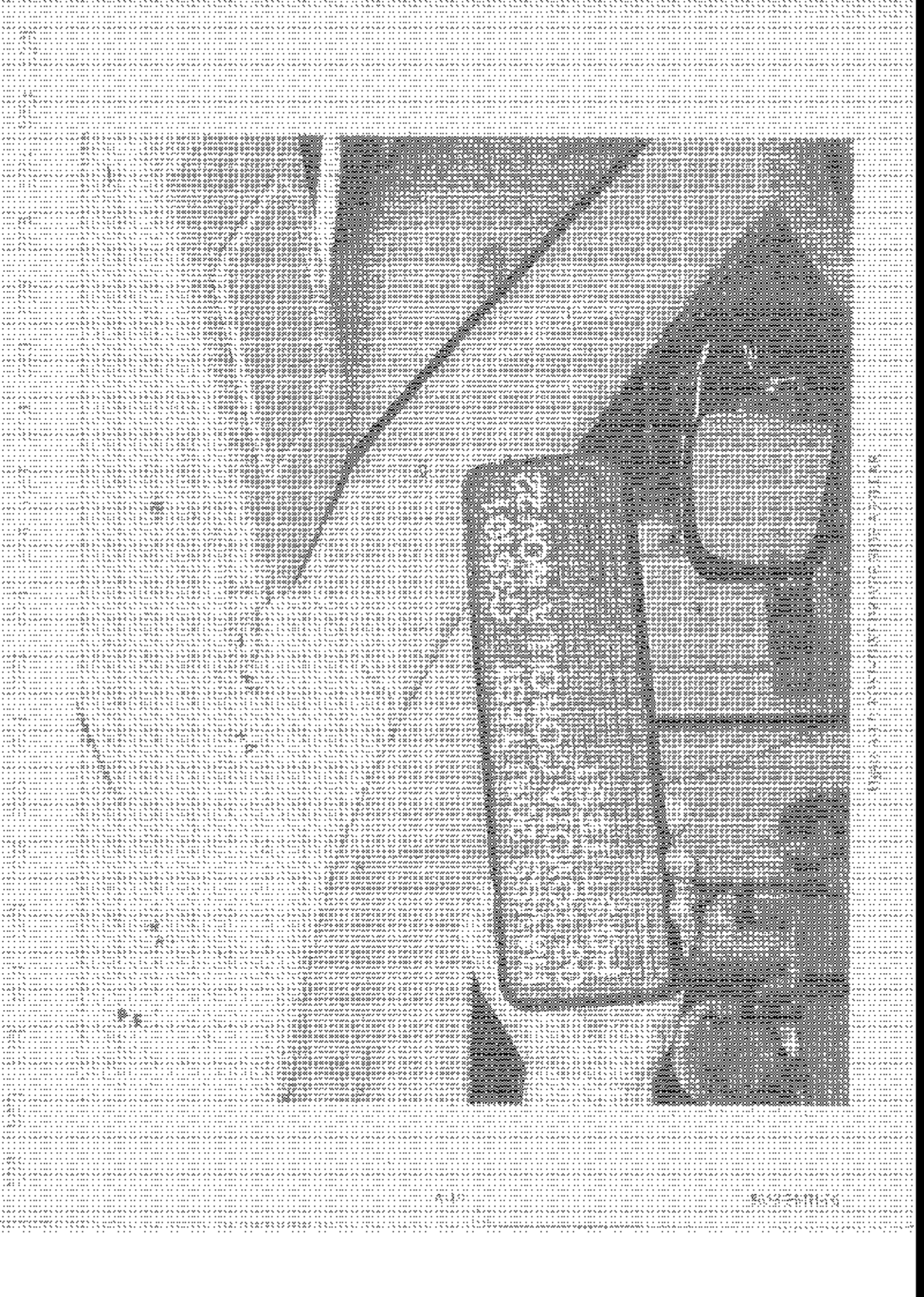


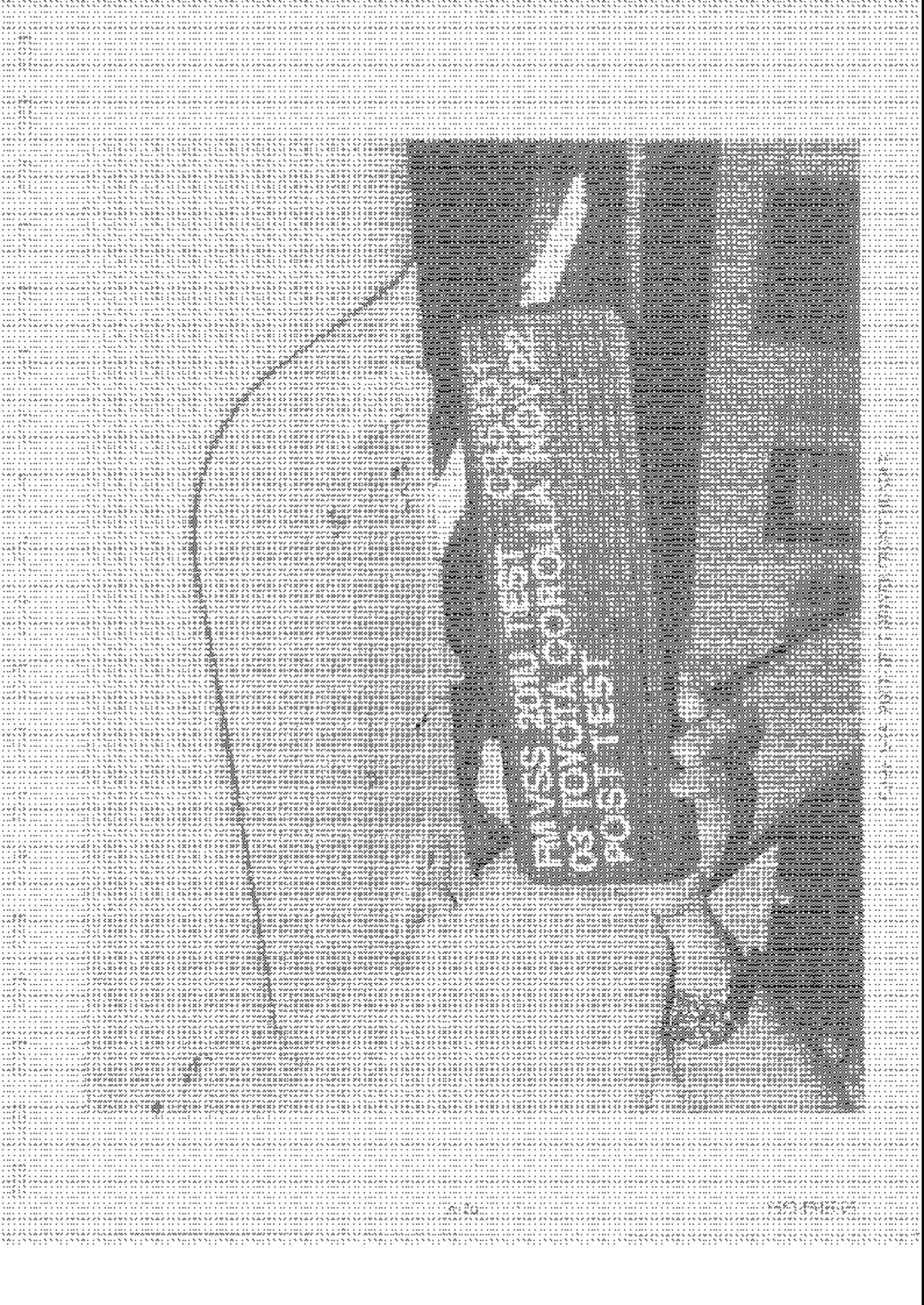


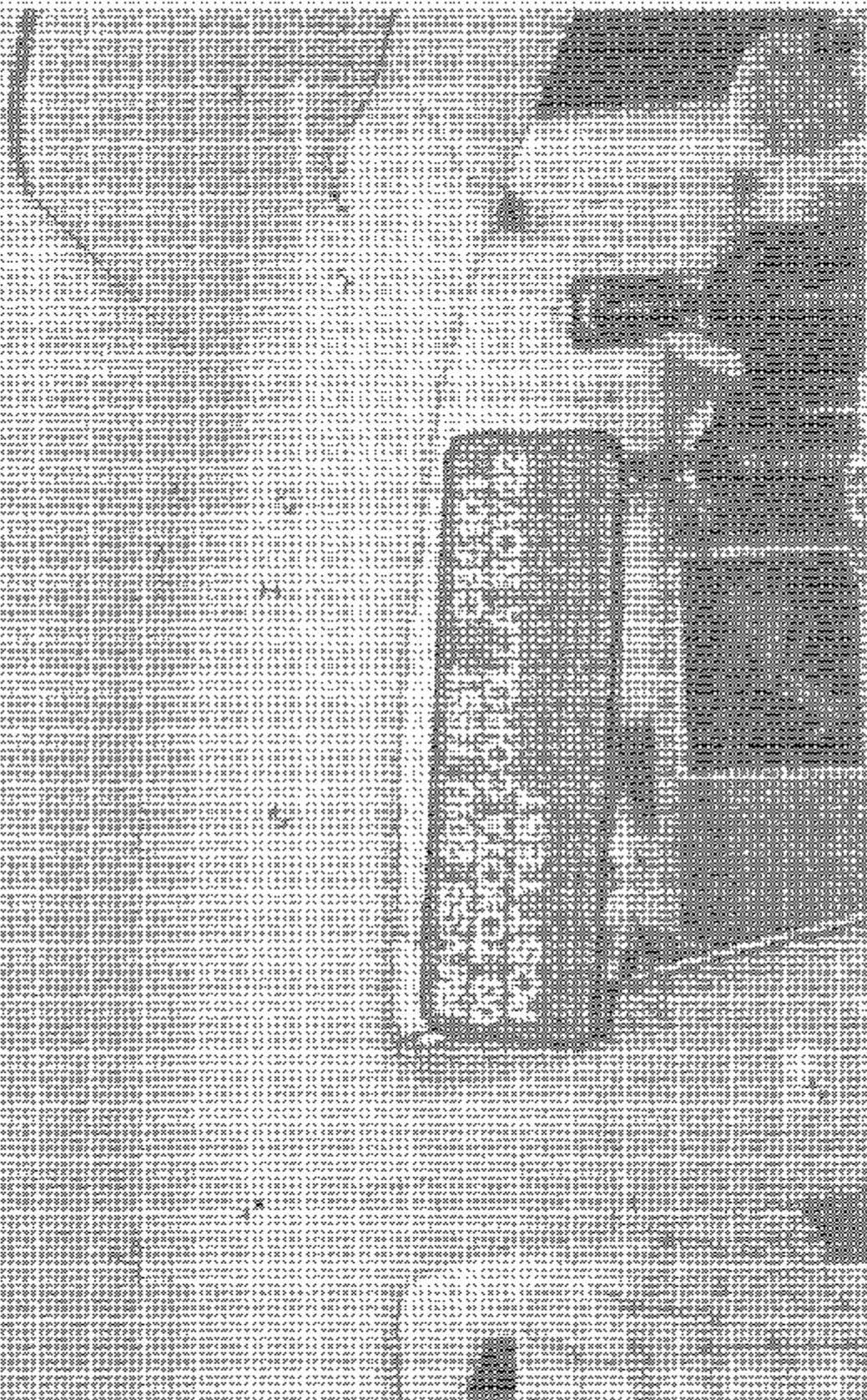


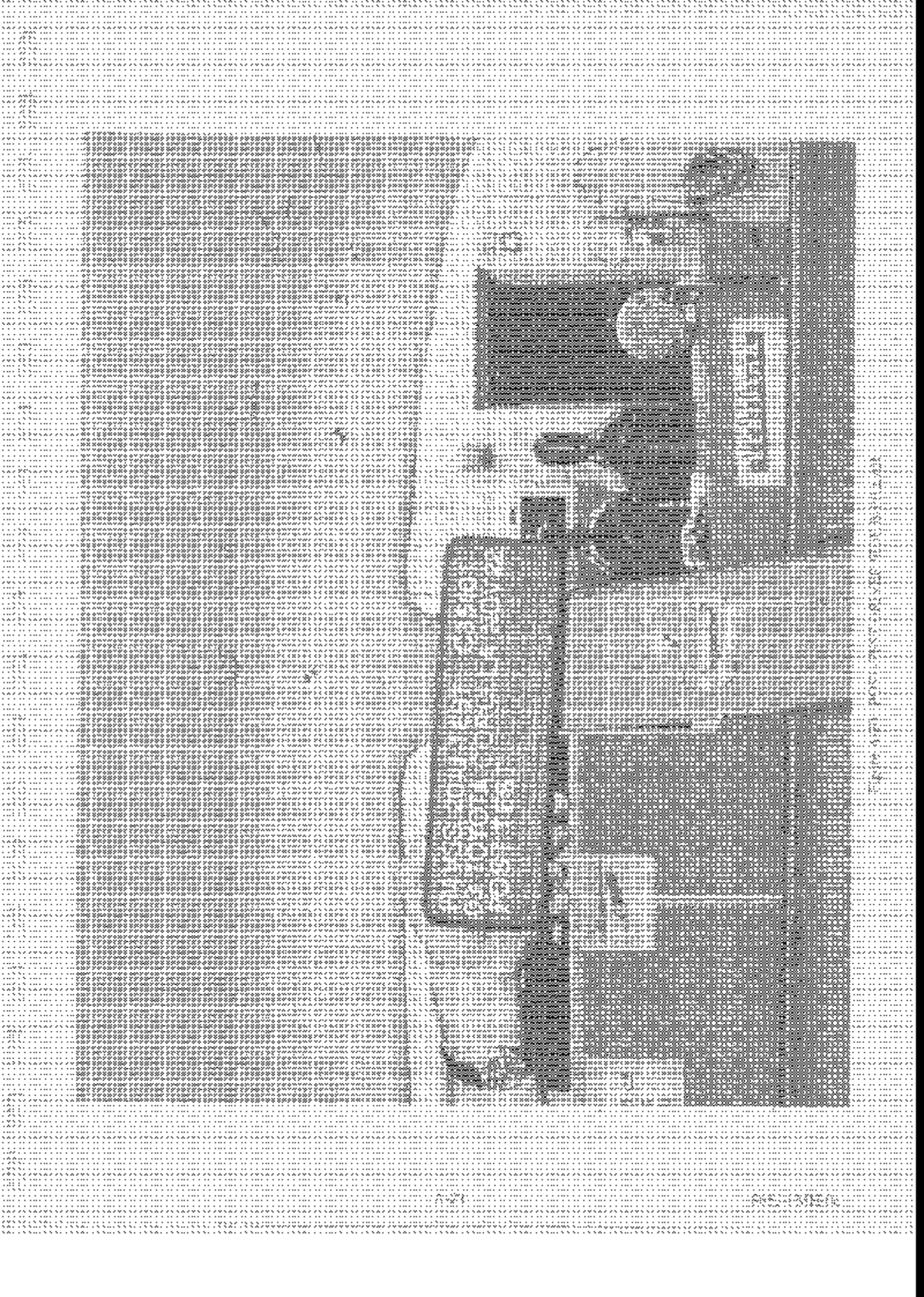


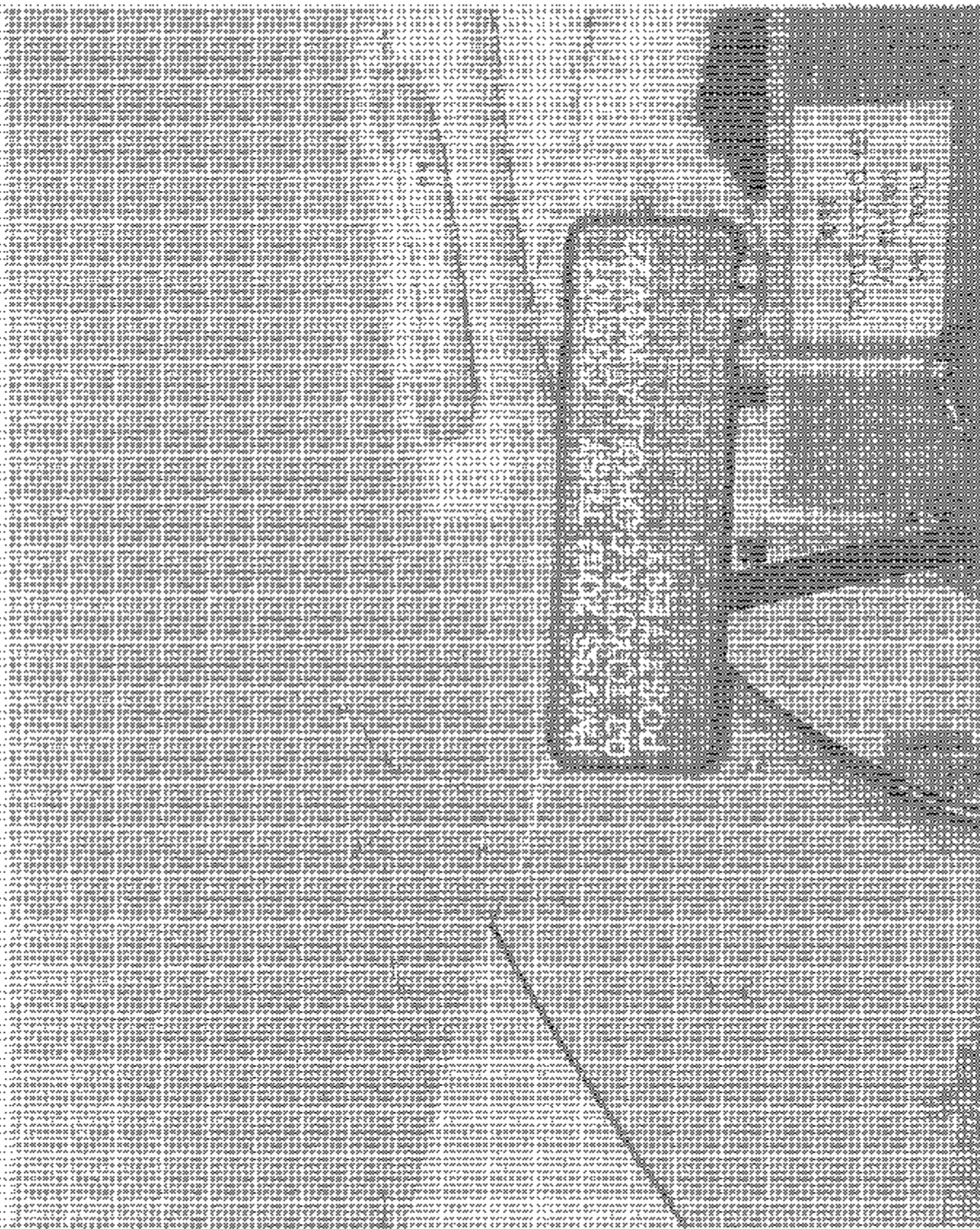




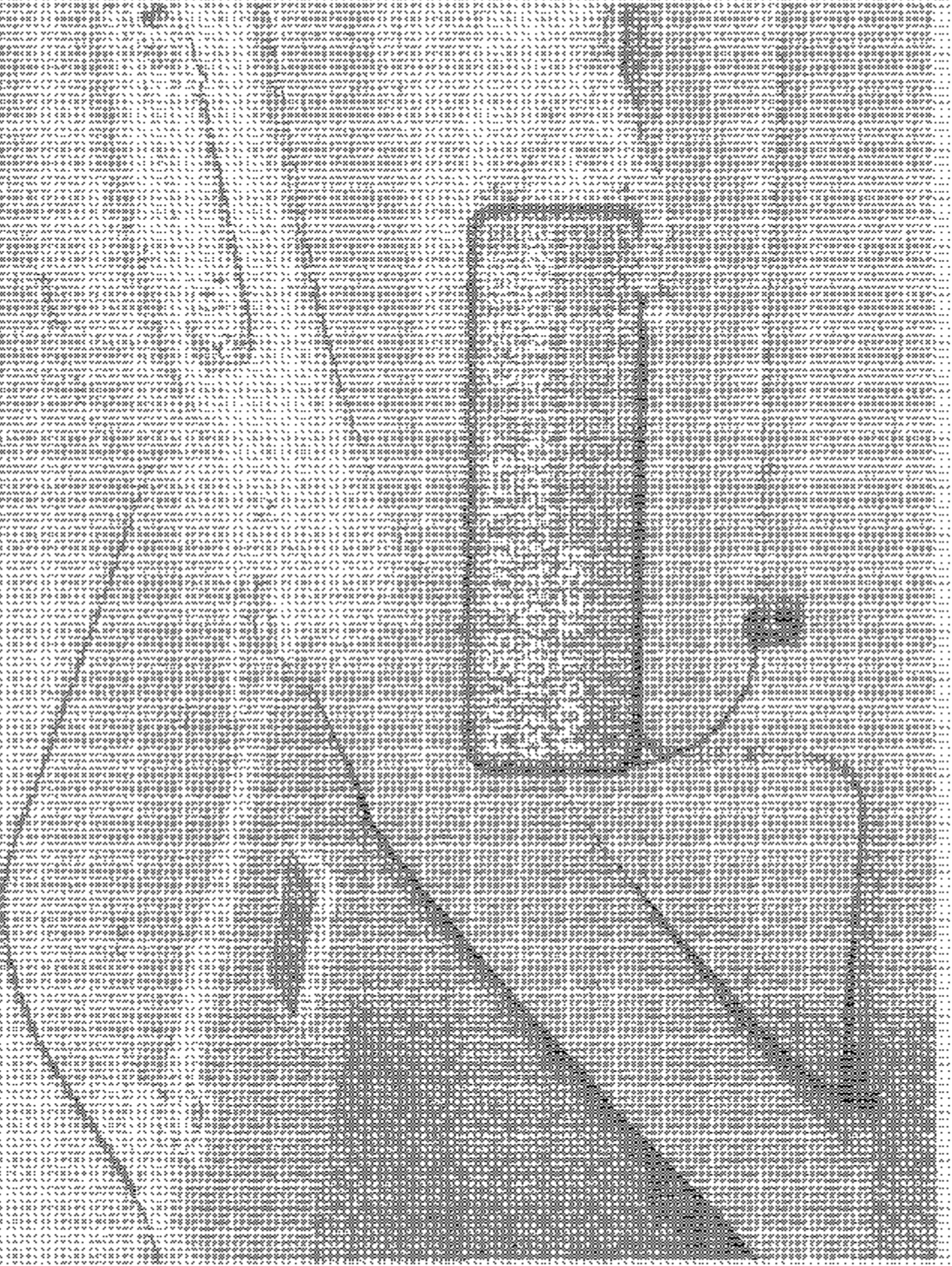




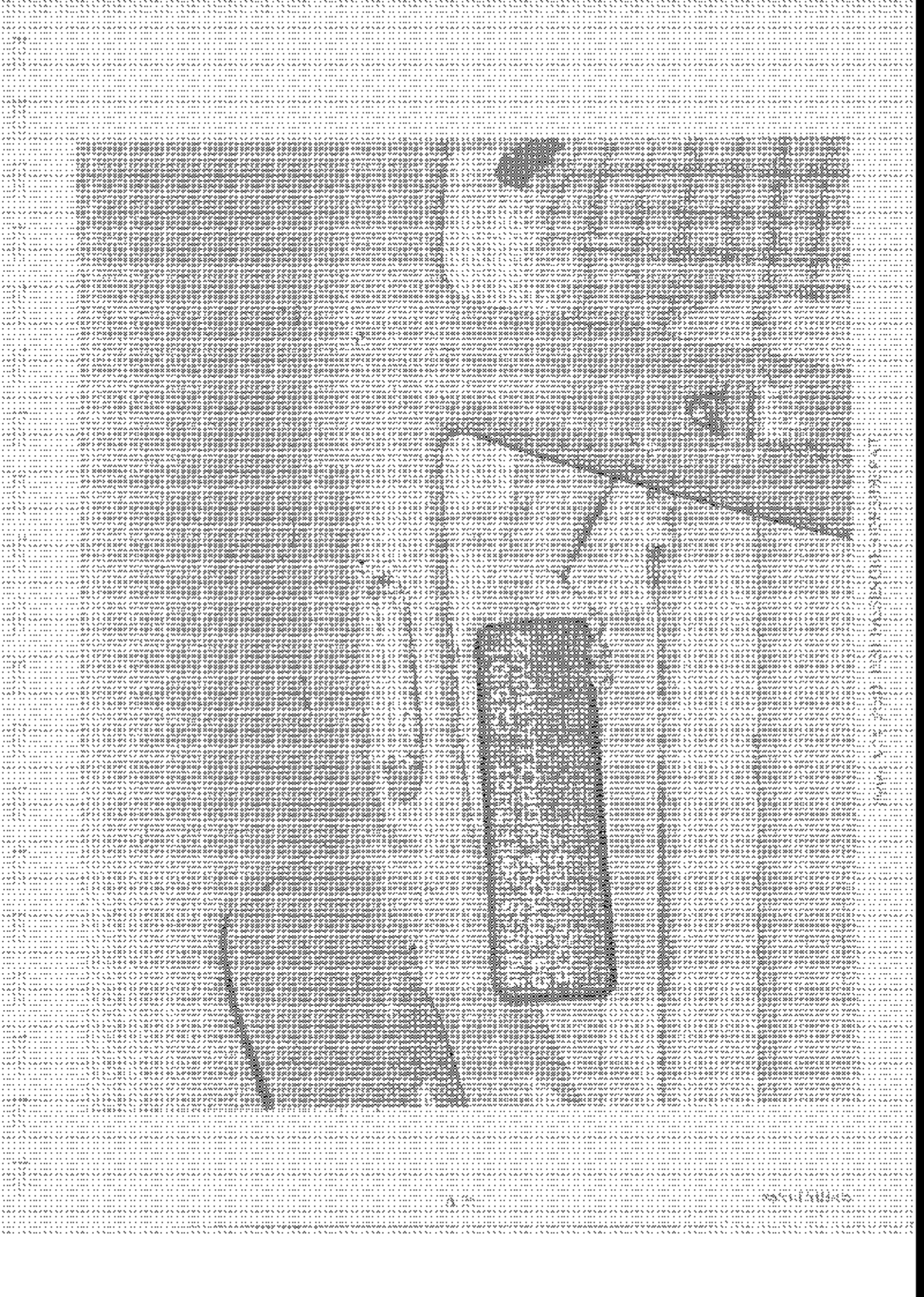


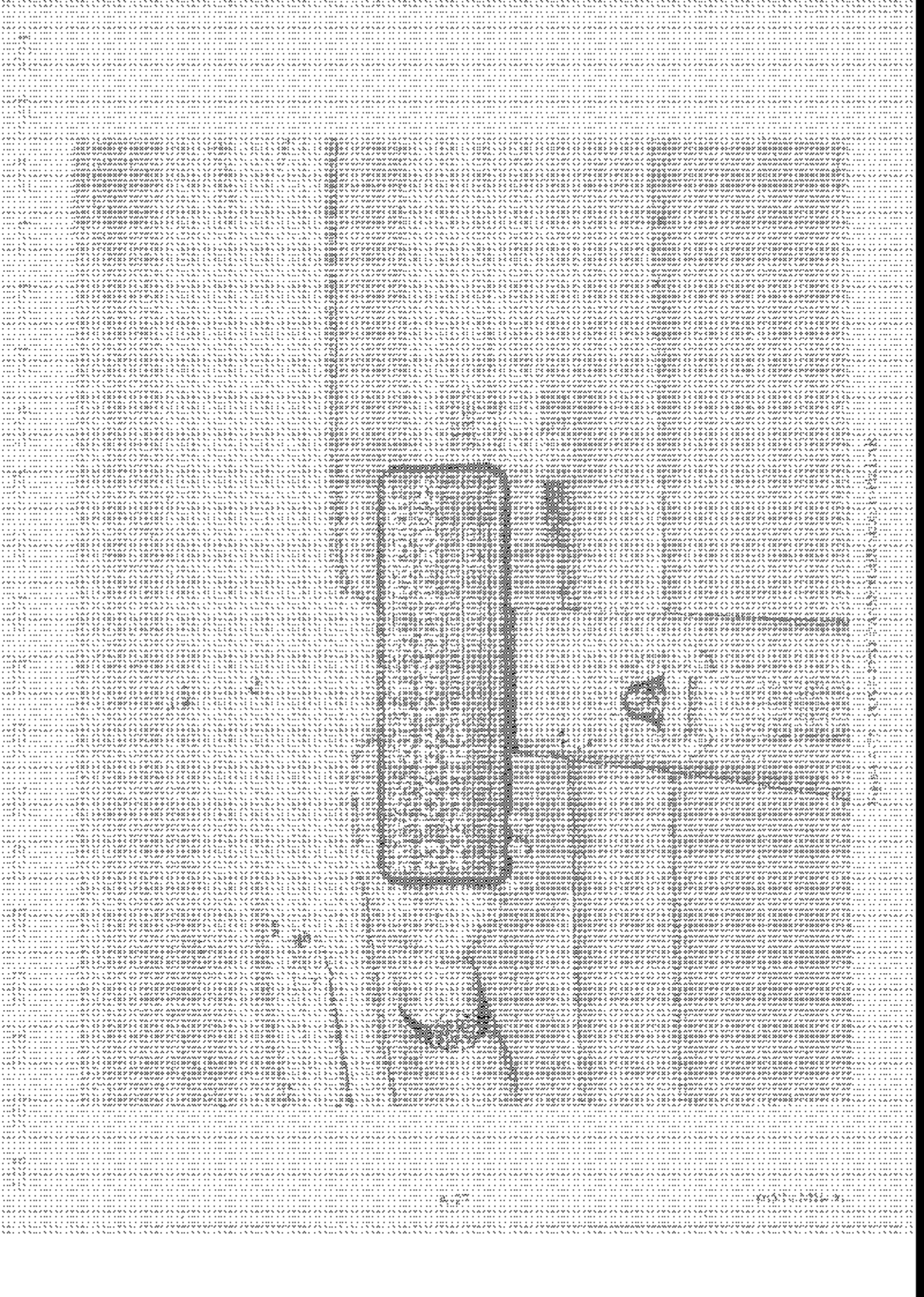


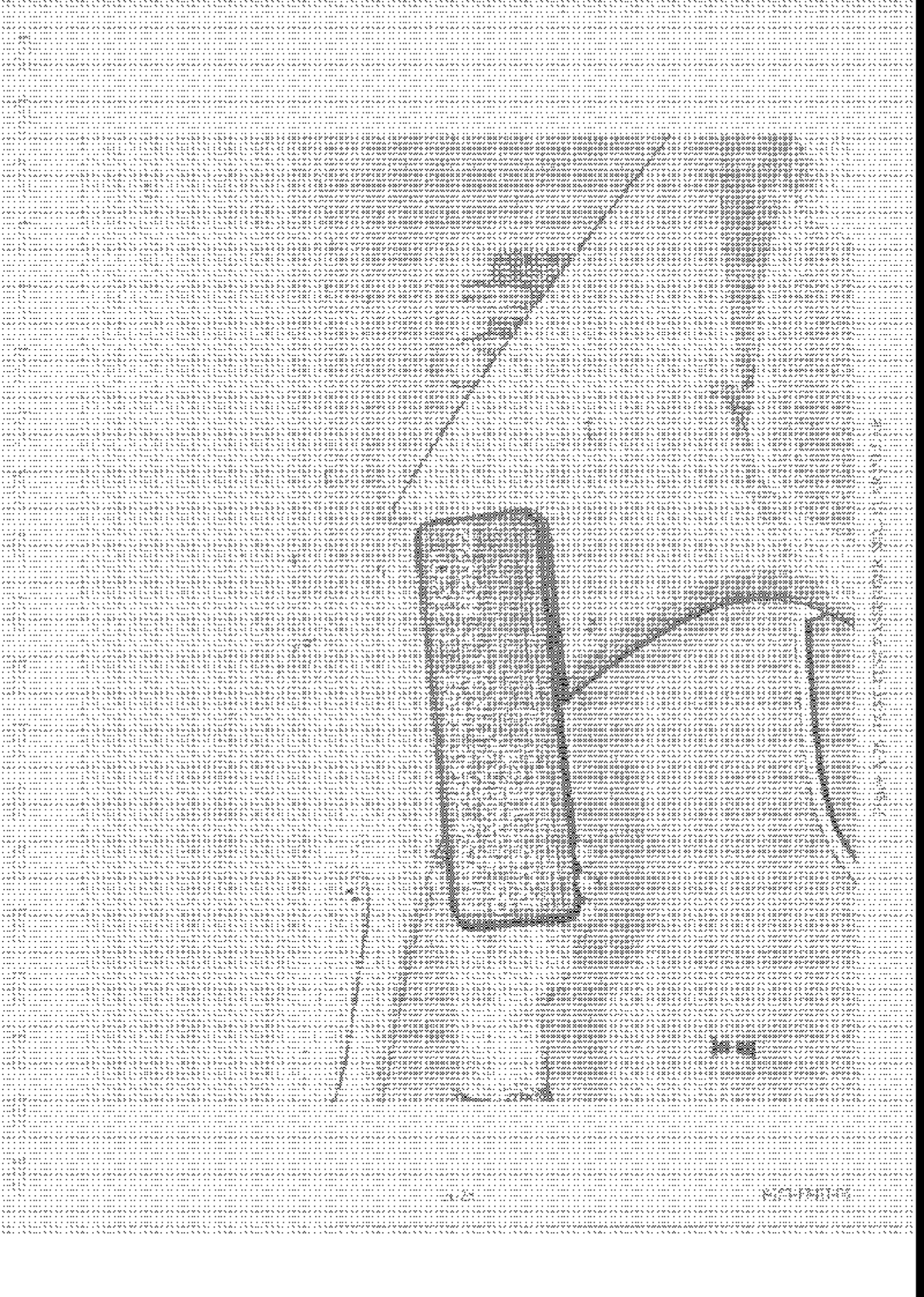
PHOTOGRAPH BY [illegible]



FRVSS 2011 TEST C35101
03 TOYOTA COROLLA NOV22
POST TEST







APPENDIX B

PART 572L PERFORMANCE CALIBRATION IN SUPPORT OF VEHICLE SAFETY COMPLIANCE TESTING FOR OCCUPANT PROTECTION IN INTERIOR IMPACT

Appendix B contains the results from certification tests performed on the Free Motion Headforms utilized in this test program. The results indicate that the headforms meet all of the performance specifications given in 49 CFR Part 572 Subpart L.

The tests were conducted at the Dummy Certification Test Facility of Veridian Engineering. A summary of the test results are included in this Appendix.

**PART 5721.
HEAD DROP PRE-TEST**

MANUFACTURER:	FIRST TECHNOLOGIES SAFETY SYSTEMS	
SERIAL NUMBER:	0642	
CALIBRATION DATE:	November 7, 2002	
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	22
RELATIVE HUMIDITY	10% to 70%	34
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	240.9
PEAK LATERAL ACCELERATION	15 Gs Maximum	6.0
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

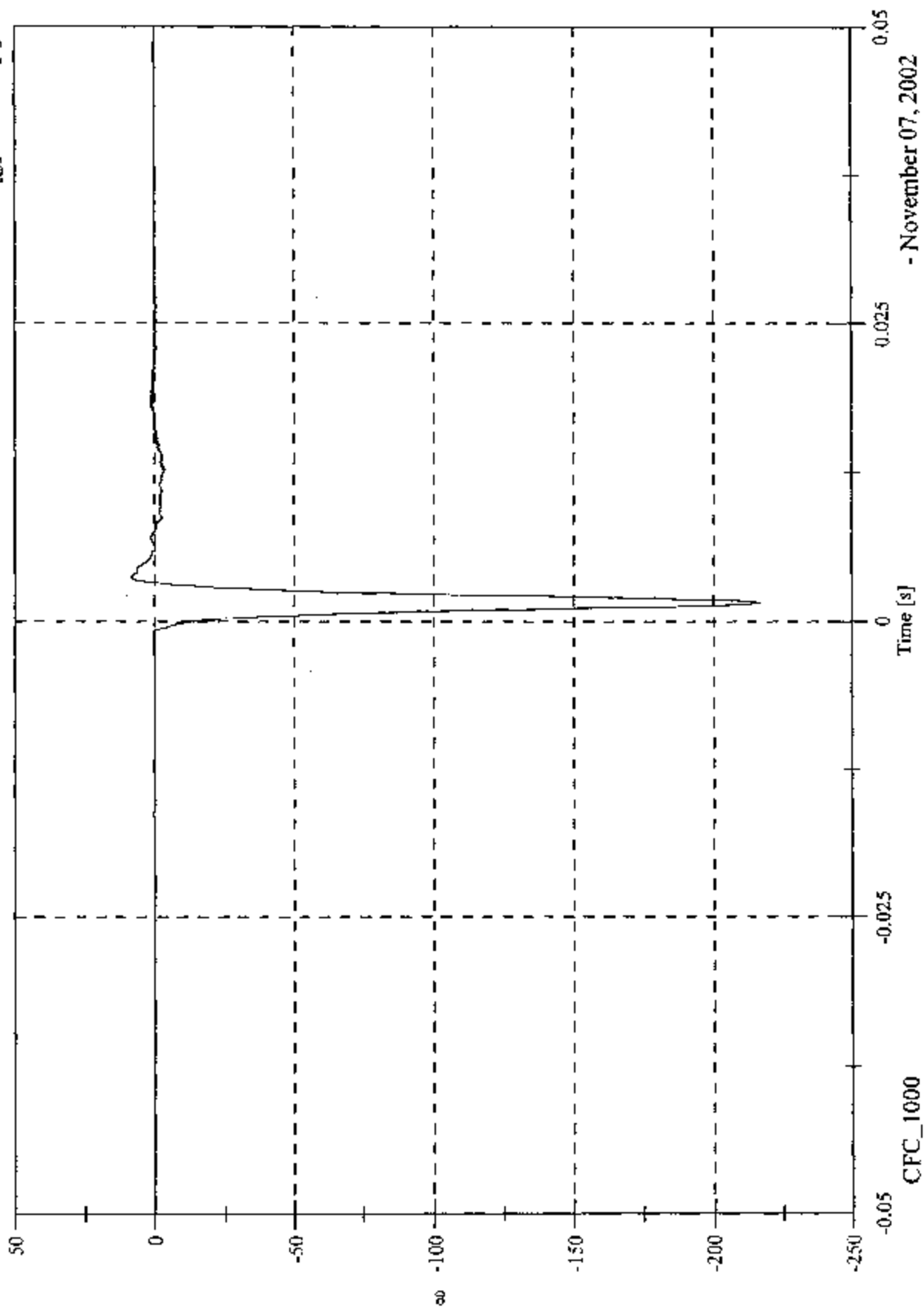
I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J24876	9/02	3/03
2 - LATERAL	ENDEVCO	7264-2000T	J33030	9/02	3/03
3 - VERTICAL	ENDEVCO	7264-2000T	J31009	9/02	3/03

REMARKS:

FMVSS 201U - Head Form Calibration Drops

Max: 8.2 [g] at 0.004 [s]
Min: -216.7 [g] at 0.002 [s]

Headform X Acceleration

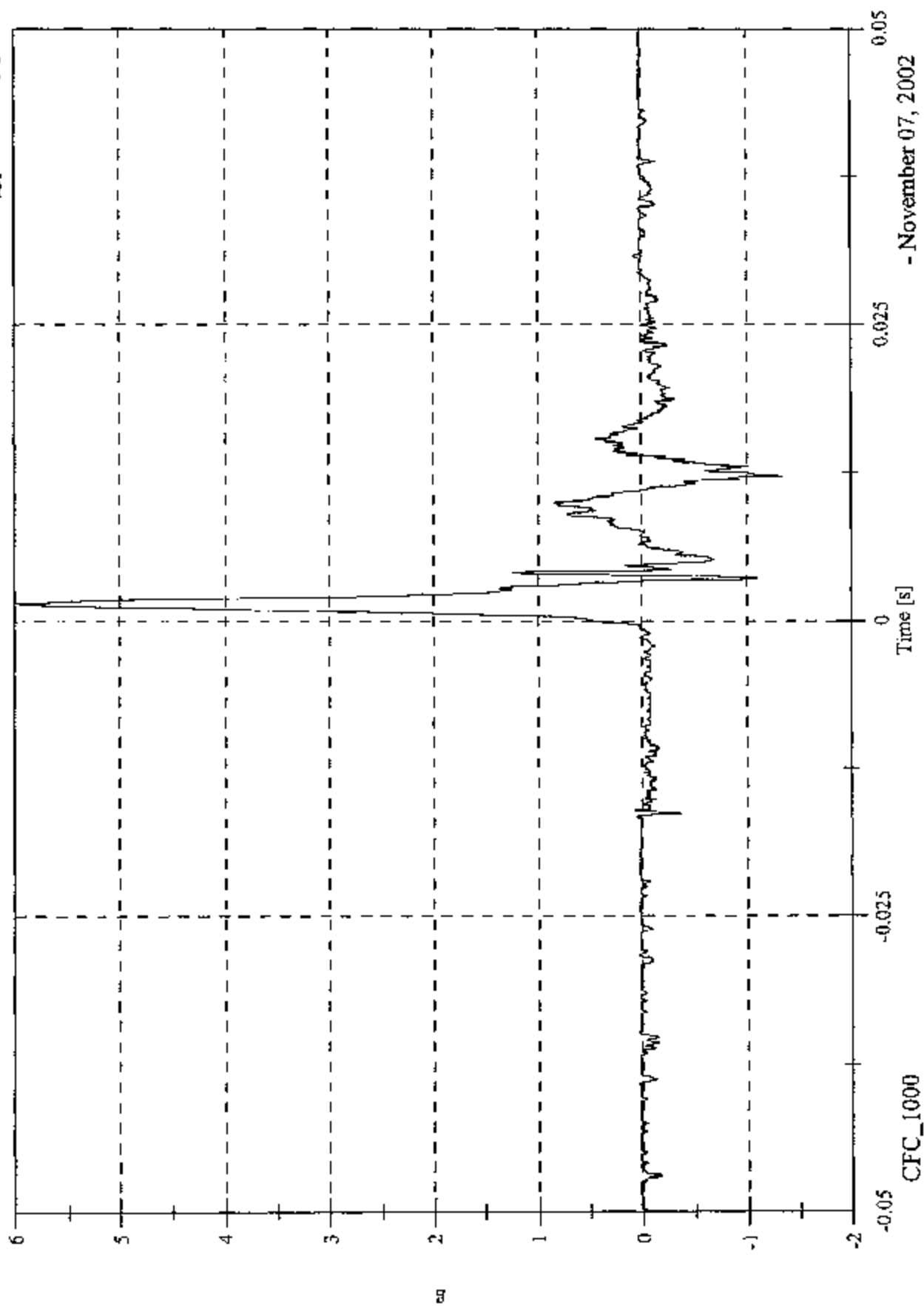


- November 07, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 6.0 [g] at 0.001 [s]
Min: -1.3 [g] at 0.012 [s]

Headform Y Acceleration

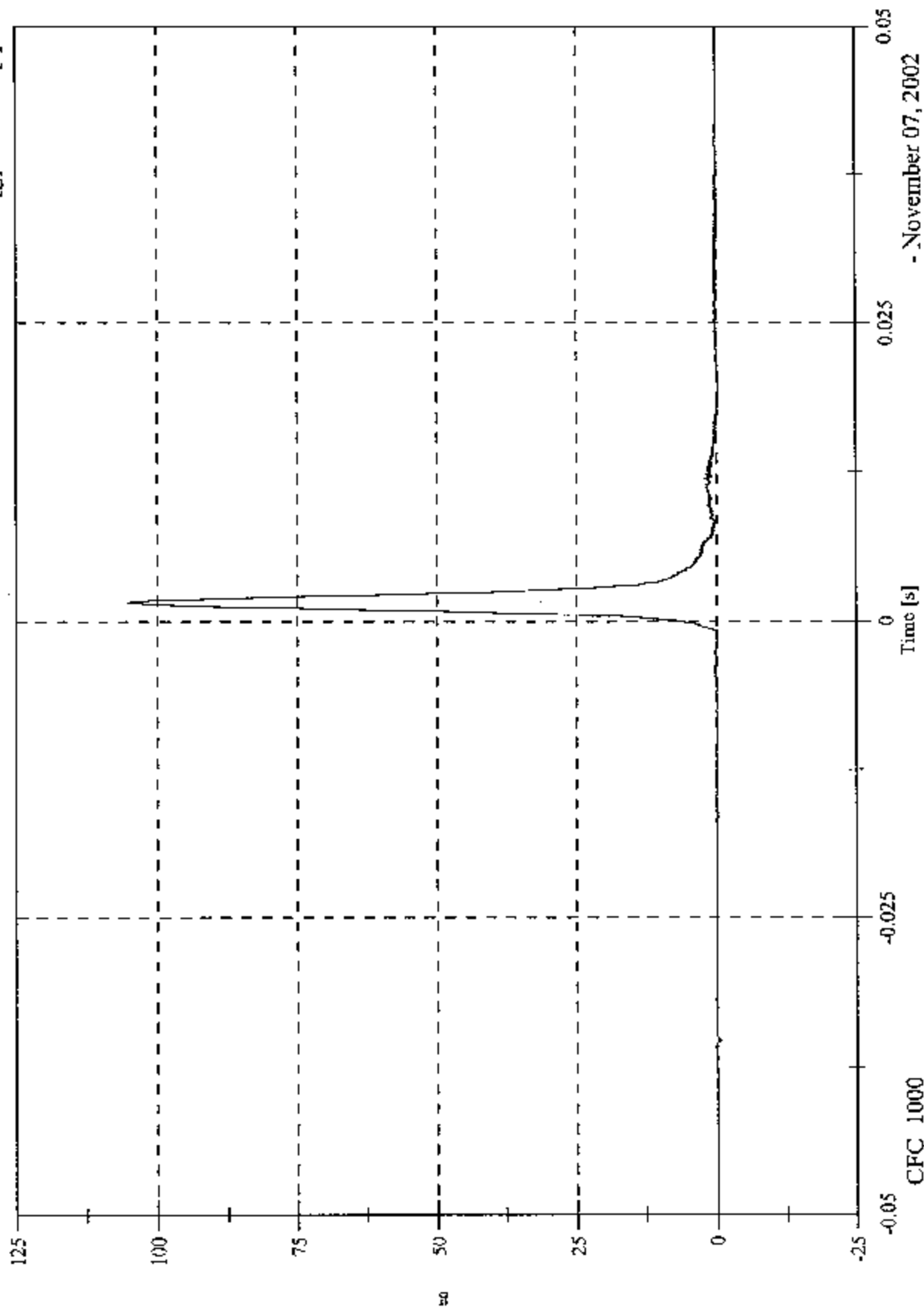


- November 07, 2002

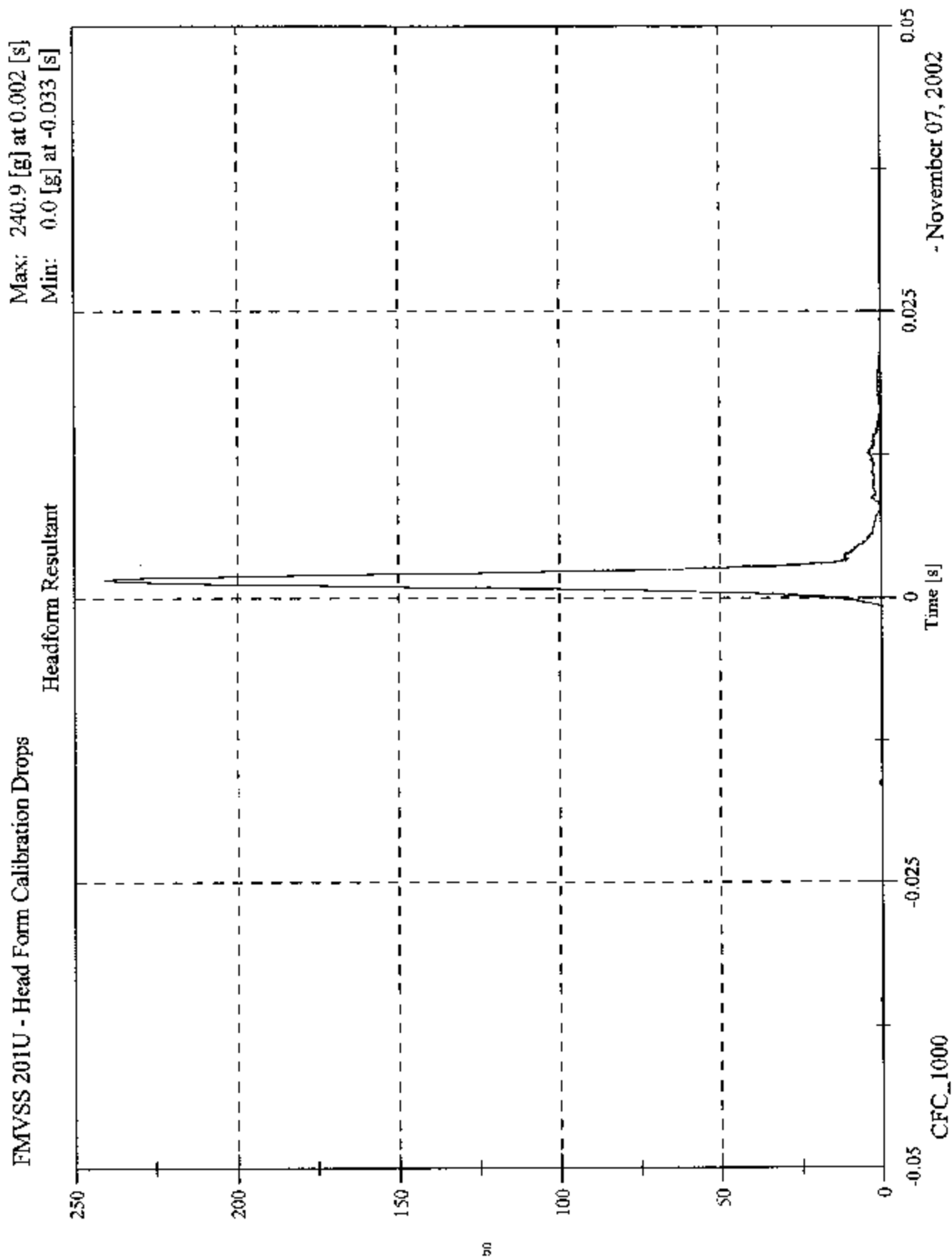
FMVSS 201U - Head Form Calibration Drops

Headform Z Acceleration

Max: 105.3 [g] at 0.002 [s]
Min: -0.5 [g] at -0.035 [s]



- November 07, 2002



**PART 5721,
HEAD DROP PRE-TEST**

MANUFACTURER:	FIRST TECHNOLOGIES SAFETY SYSTEMS	
SERIAL NUMBER:	805	
CALIBRATION DATE:	November 7, 2002	
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	22
RELATIVE HUMIDITY	10% to 70%	34
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	266.0
PEAK LATERAL ACCELERATION	15 Gs Maximum	4.5
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J38127	9/02	3/03
2 - LATERAL	ENDEVCO	7264-2000T	J37980	9/02	3/03
3 - VERTICAL	ENDEVCO	7264-2000U	J37854	9/02	3/03

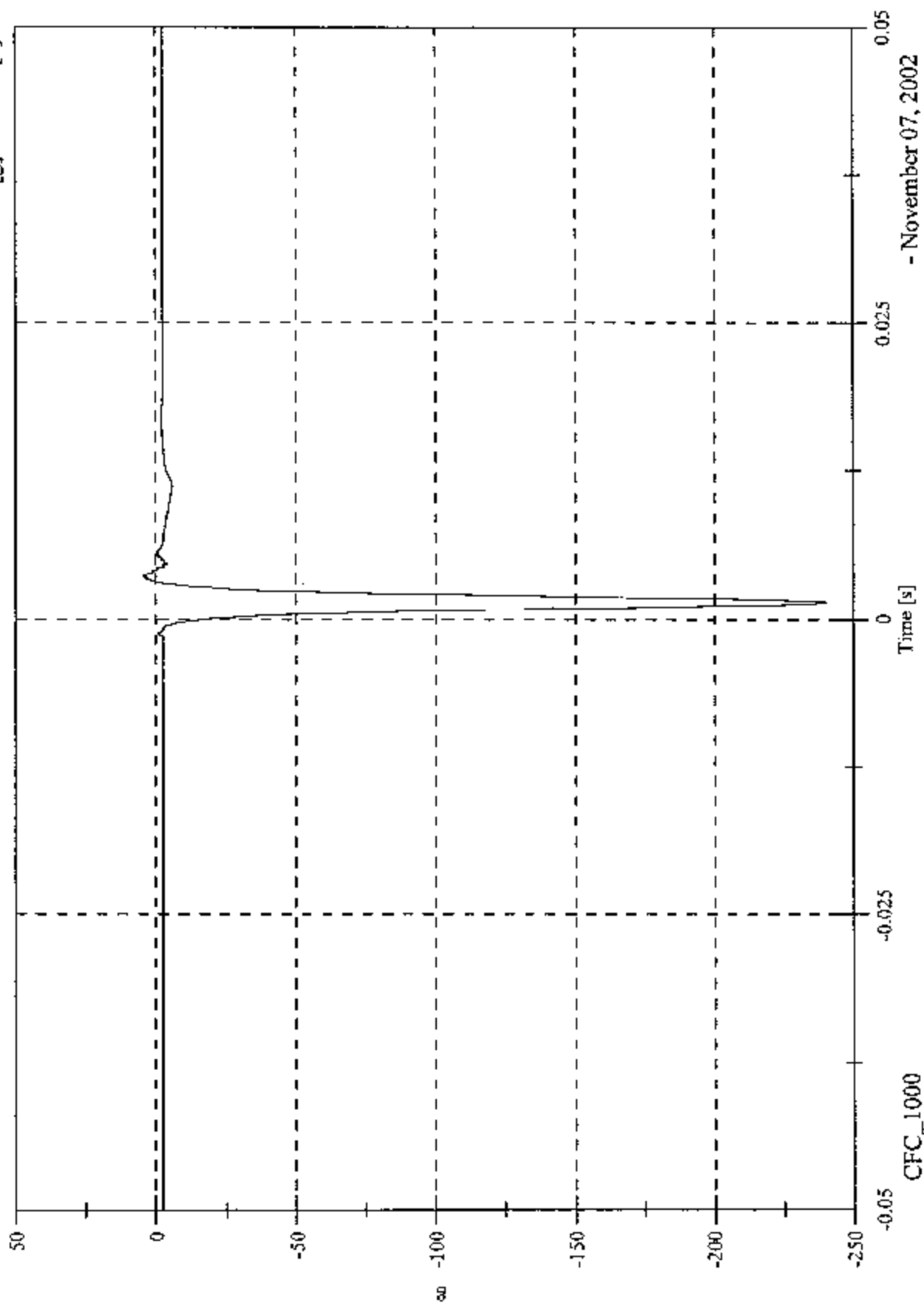
REMARKS:

FMVSS 201U - Head Form Calibration Drops

Max: 4.4 [g] at 0.004 [s]

Min: -240.0 [g] at 0.001 [s]

Headform X Acceleration

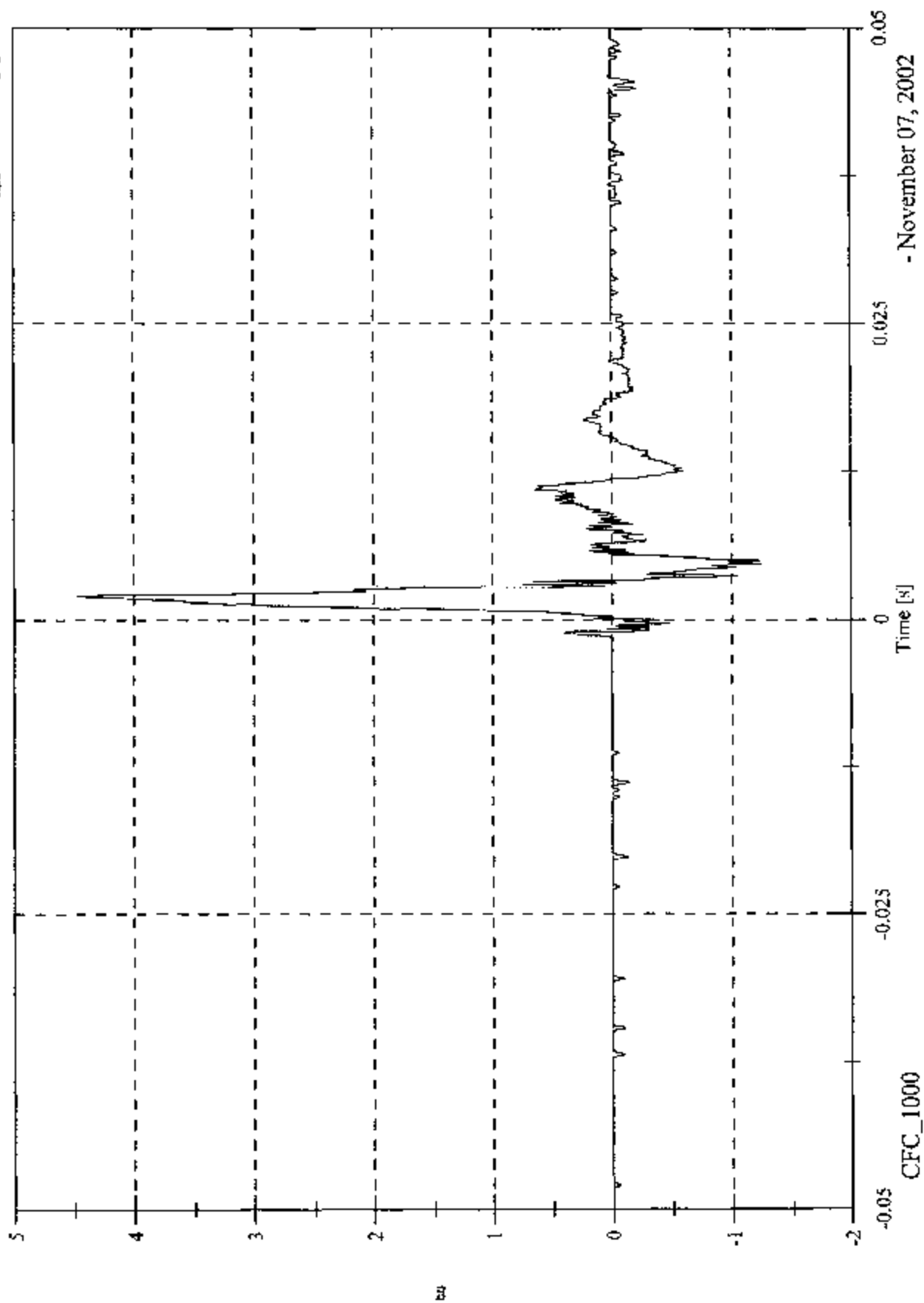


- November 07, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 4.5 [g] at 0.002 [s]
Min: -1.2 [g] at 0.005 [s]

Headform Y Acceleration



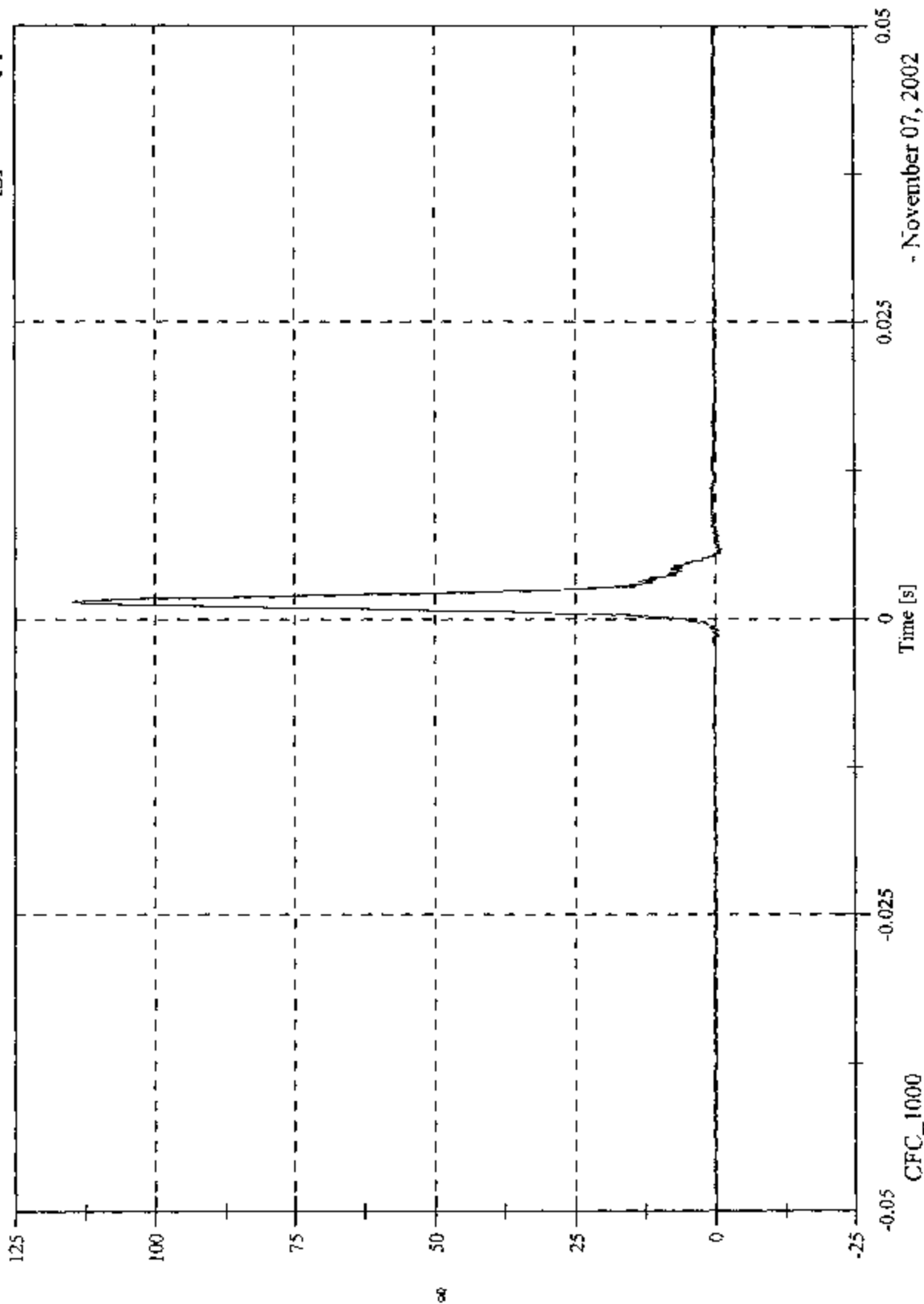
- November 07, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 114.8 [g] at 0.001 [s]

Min: -1.1 [g] at 0.006 [s]

Headform Z Acceleration

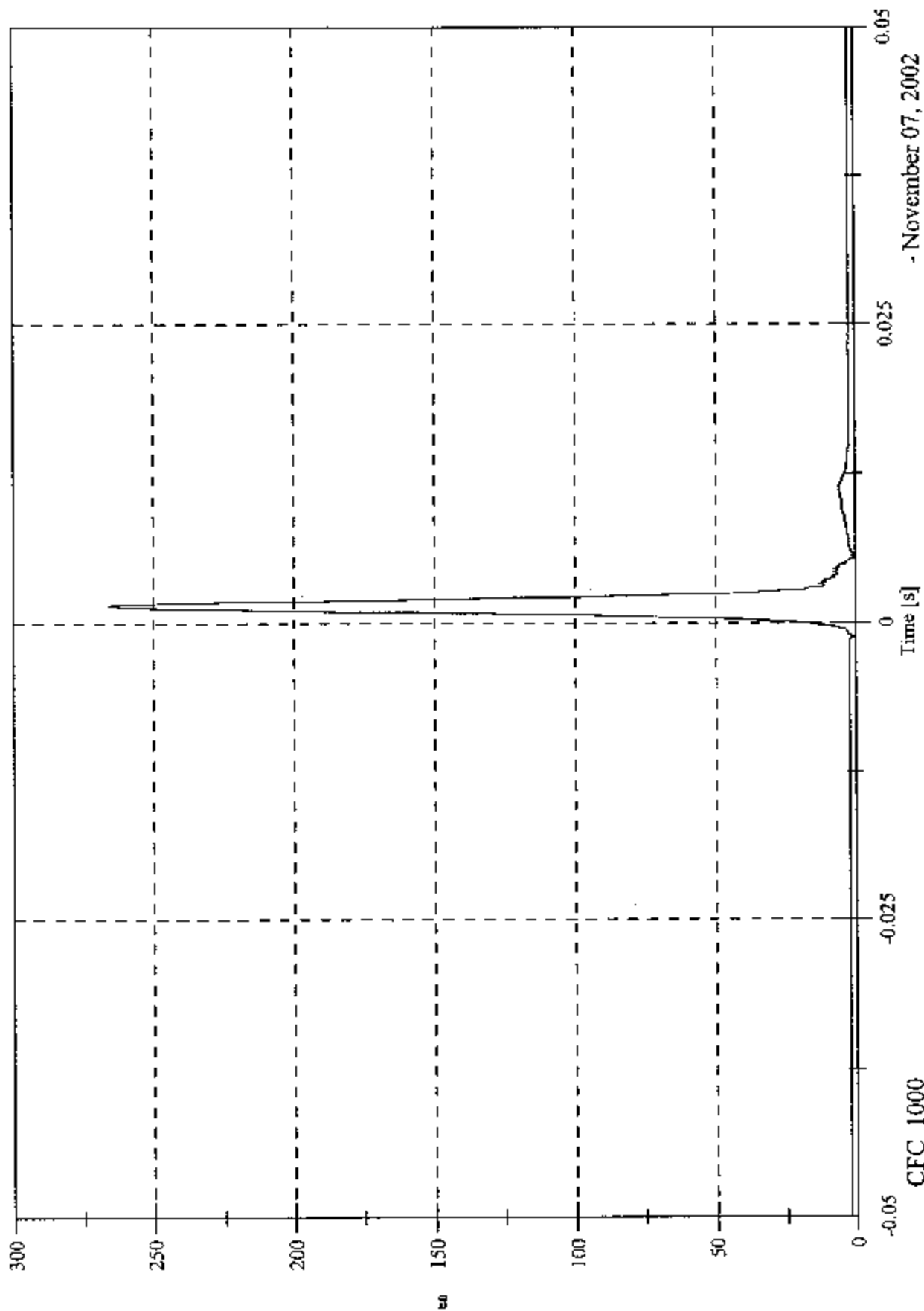


- November 07, 2002

FMVSS 201U - Head Form Calibration Drops

Headform Resultant

Max: 266.0 [g] at 0.001 [s]
Min: 0.8 [g] at 0.005 [s]



**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:	APPLIED SAFETY TECHNOLOGIES CORPORATION	
SERIAL NUMBER:	0062	
CALIBRATION DATE:	November 7, 2002	
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	22
RELATIVE HUMIDITY	10% to 70%	34
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	236.6
PEAK LATERAL ACCELERATION	15 Gs Maximum	1.4
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J33127	9/02	3/03
2 - LATERAL	ENDEVCO	7264-2000T	J33019	9/02	3/03
3 - VERTICAL	ENDEVCO	7264-2000T	J32782	9/02	3/03

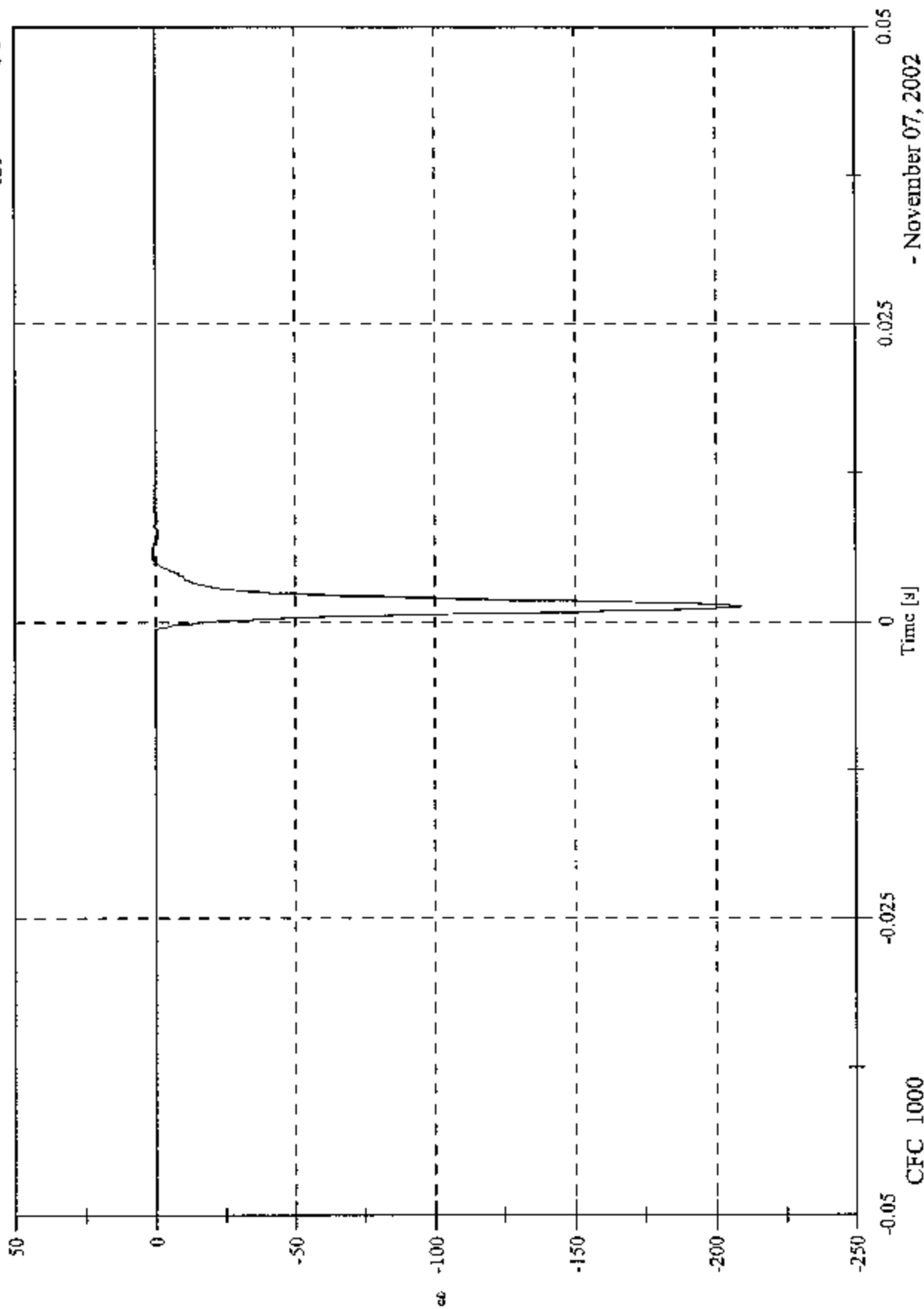
REMARKS:

FMVSS 201U - Head Form Calibration Drops

Headform X Acceleration

Max: 1.3 [g] at 0.006 [s]

Min: -208.9 [g] at 0.001 [s]

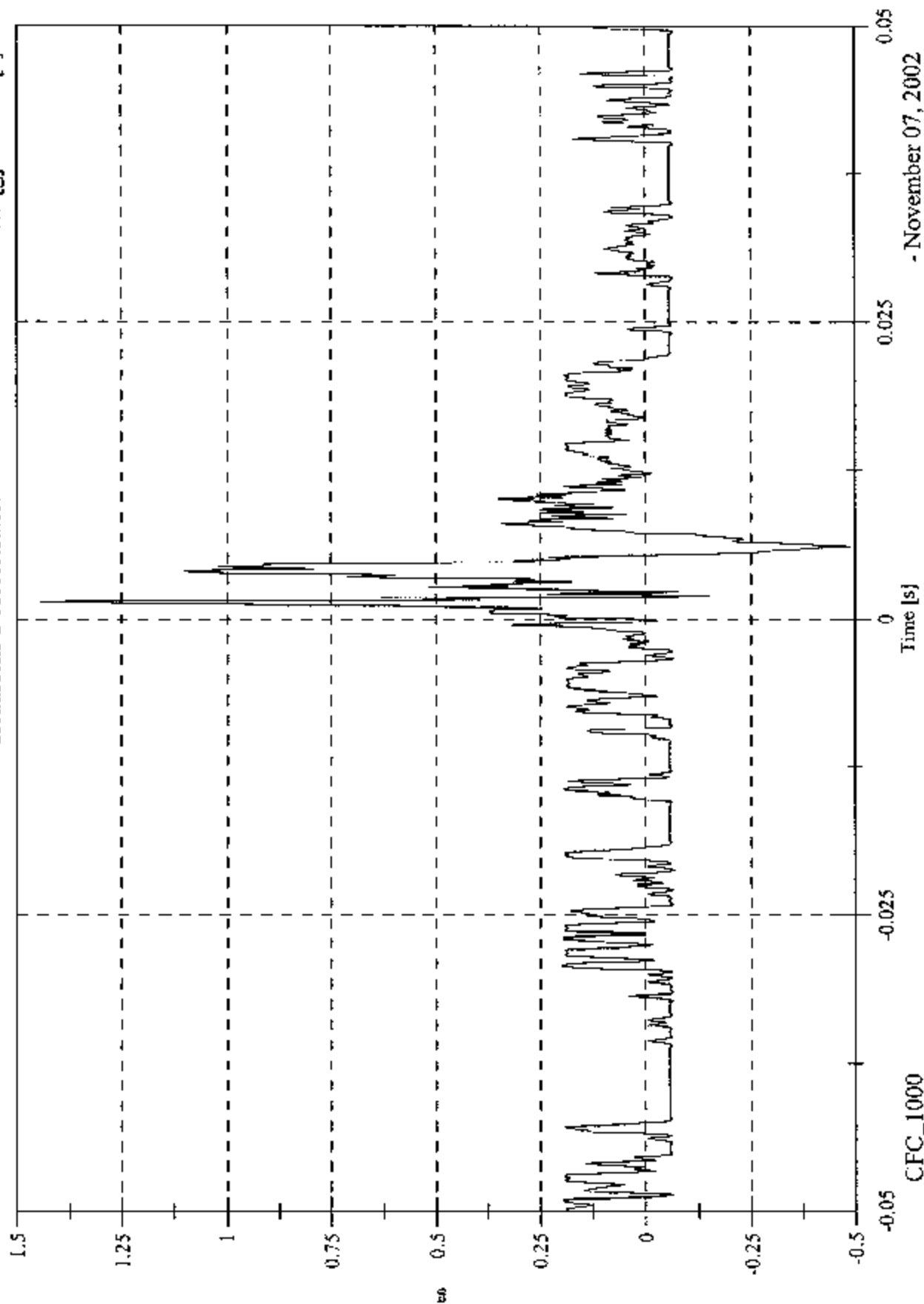


- November 07, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 1.4 [g] at 0.001 [s]
Min: -0.5 [g] at 0.006 [s]

Headform Y Acceleration



CFC_1000

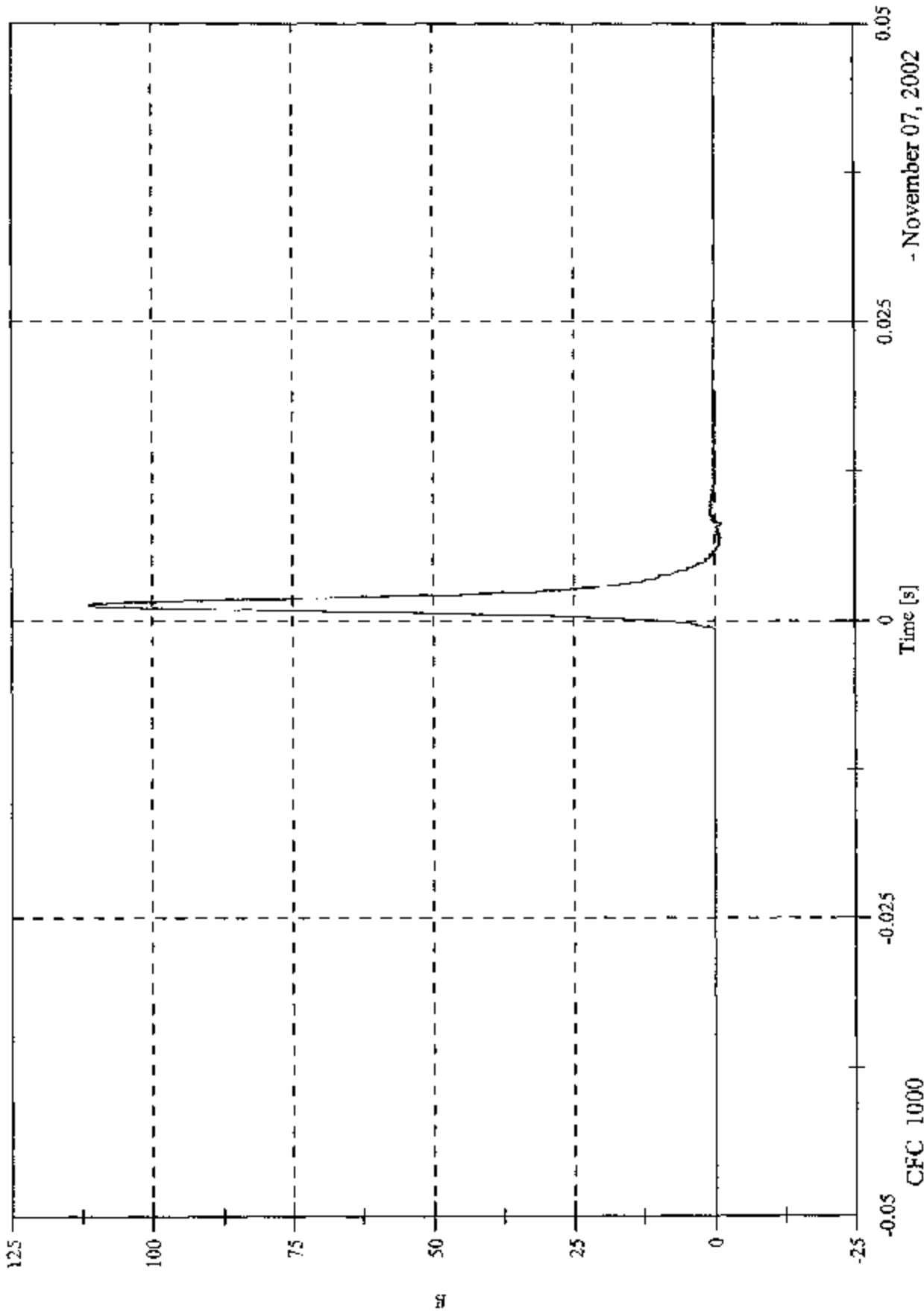
Time [s]

- November 07, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 111.4 [g] at 0.001 [s]
Min: -1.2 [g] at 0.008 [s]

Headform Z Acceleration



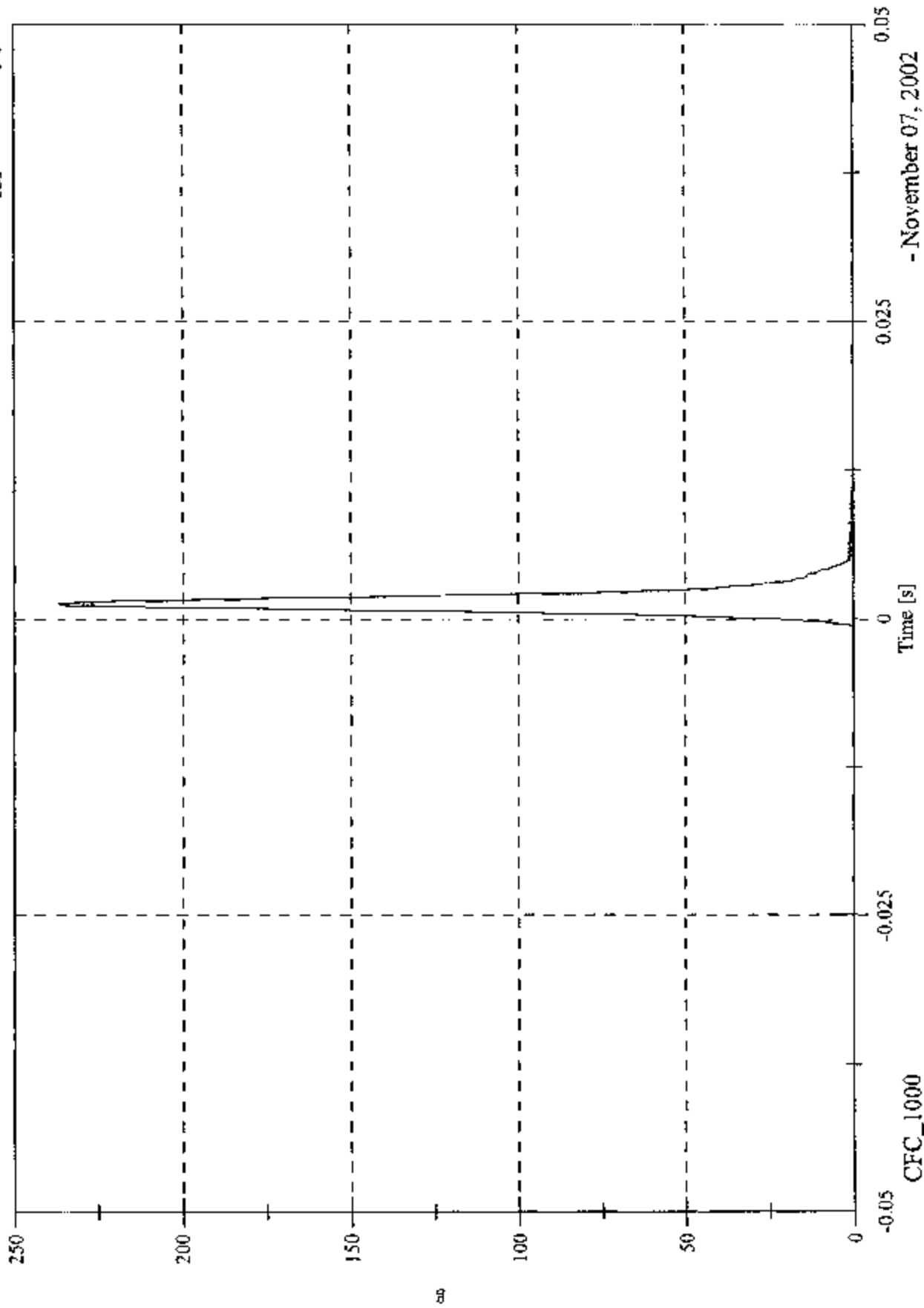
- November 07, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 236.6 [g] at 0.001 [s]

Min: 0.0 [g] at -0.022 [s]

Headform Resultant



CFC_1000

Time [s]

- November 07, 2002

**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:	APPLIED SAFETY TECHNOLOGIES CORPORATION	
SERIAL NUMBER:	0355	
CALIBRATION DATE:	November 7, 2002	
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	22
RELATIVE HUMIDITY	10% to 70%	34
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	253.9
PEAK LATERAL ACCELERATION	15 Gs Maximum	10.9
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J28671	9/02	3/03
2 - LATERAL	ENDEVCO	7264-2000T	J32779	9/02	3/03
3 - VERTICAL	ENDEVCO	7264-2000T	J25854	9/02	3/03

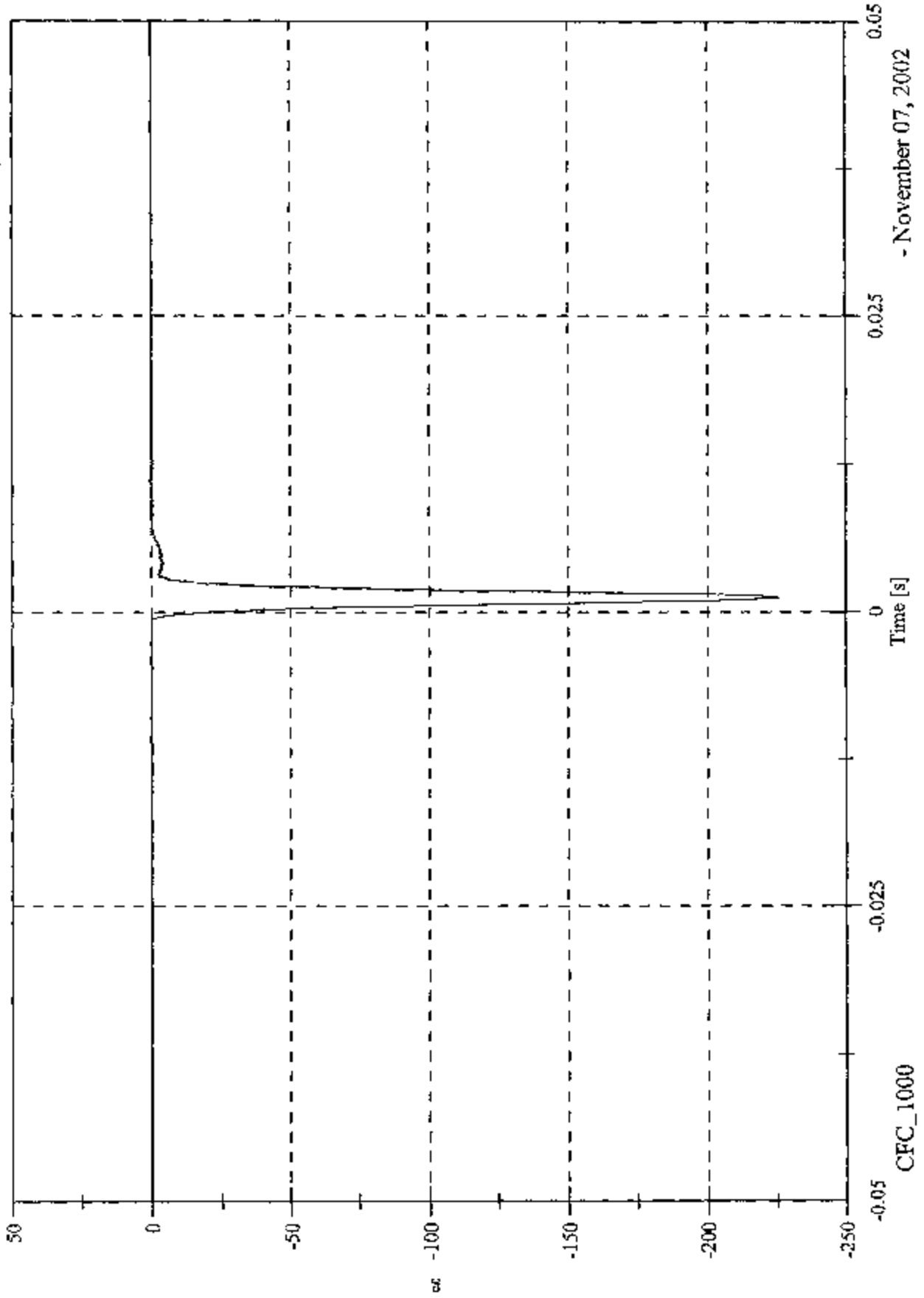
REMARKS:

FMVSS 201U - Head Form Calibration Drops

Max: 0.7 [g] at 0.011 [s]

Min: -225.4 [g] at 0.001 [s]

Headform X Acceleration

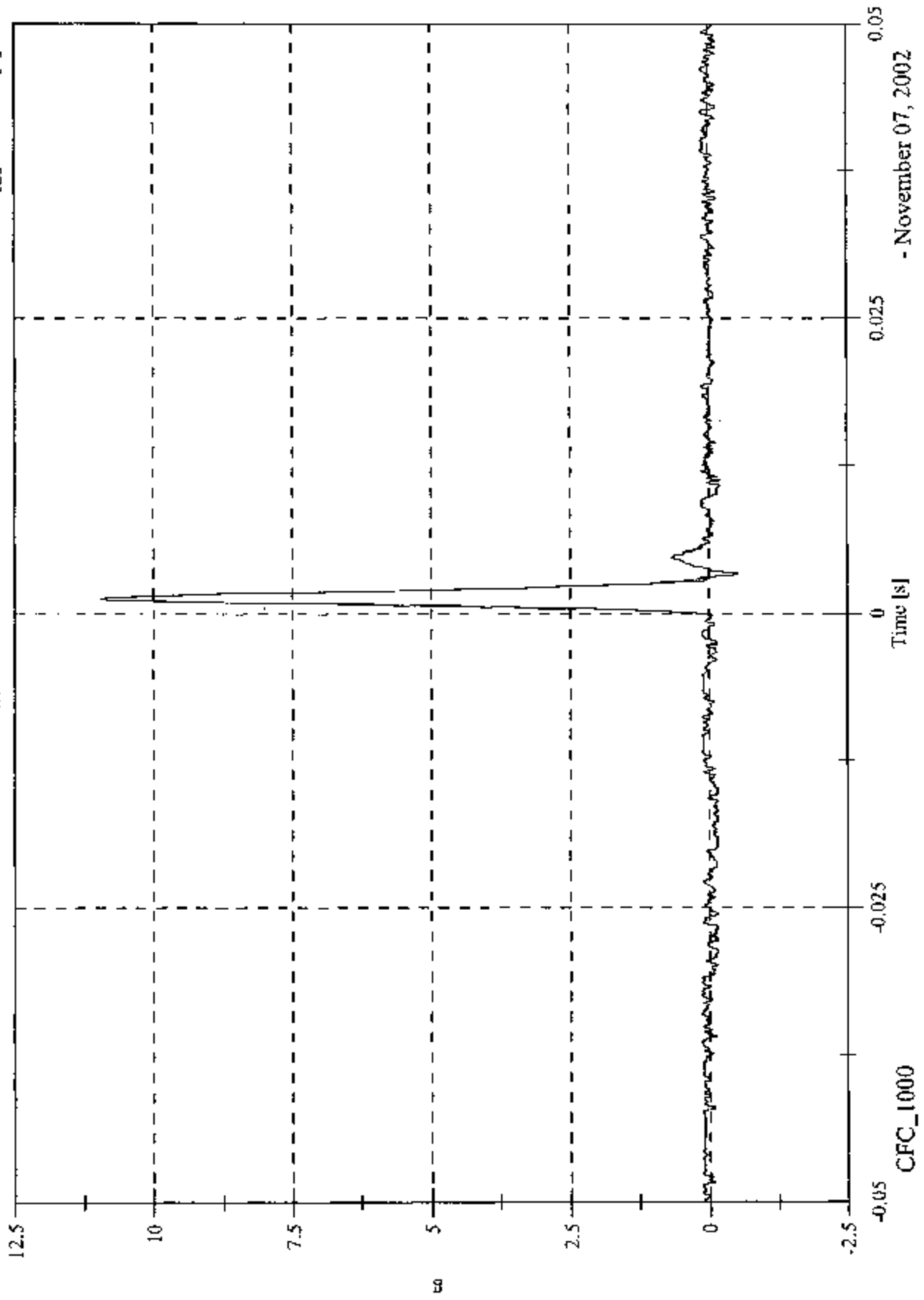


- November 07, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 10.9 [g] at 0.001 [s]
Min: -0.5 [g] at 0.003 [s]

Headform Y Acceleration

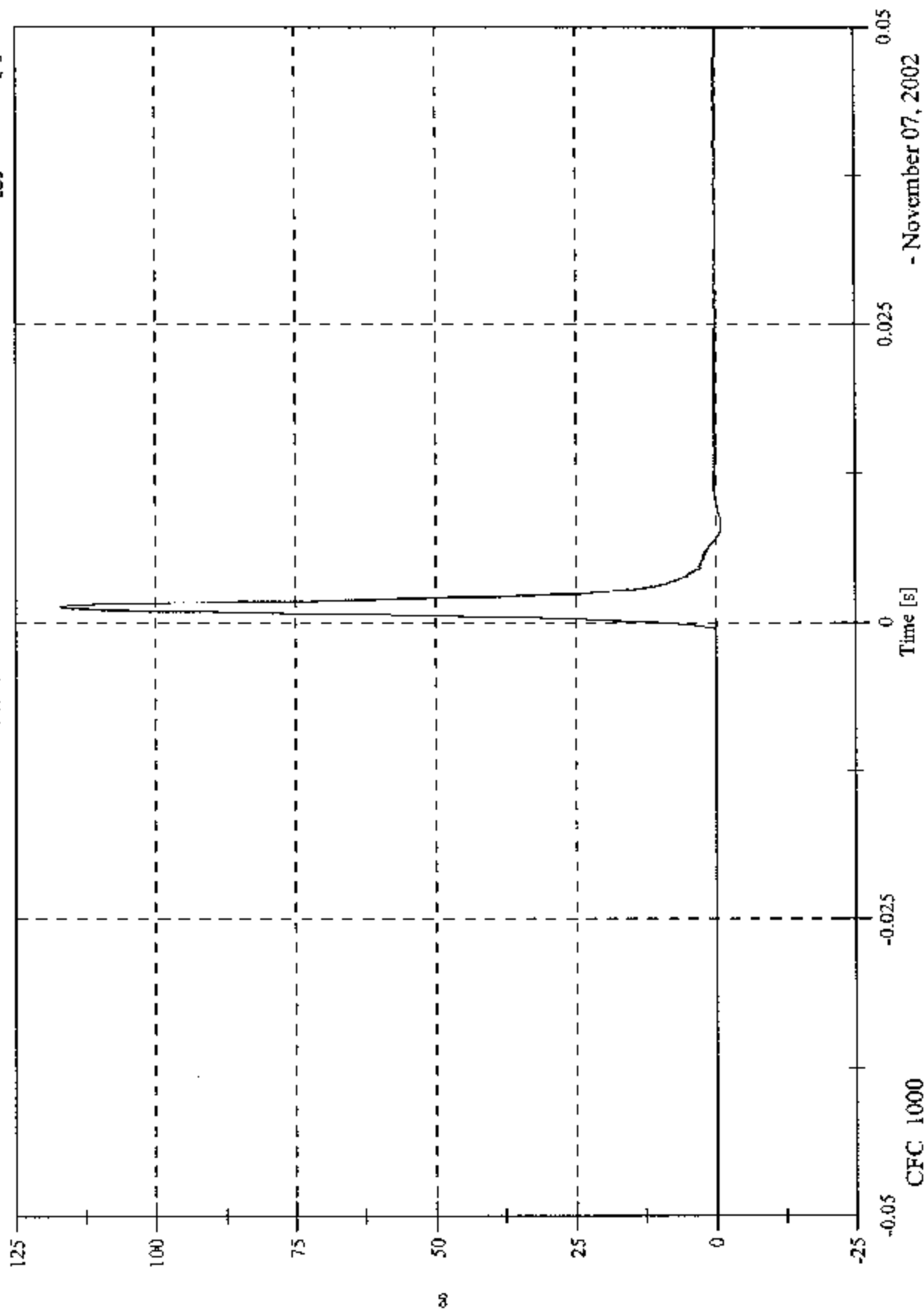


- November 07, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 117.0 [g] at 0.001 [s]
Min: -1.0 [g] at 0.008 [s]

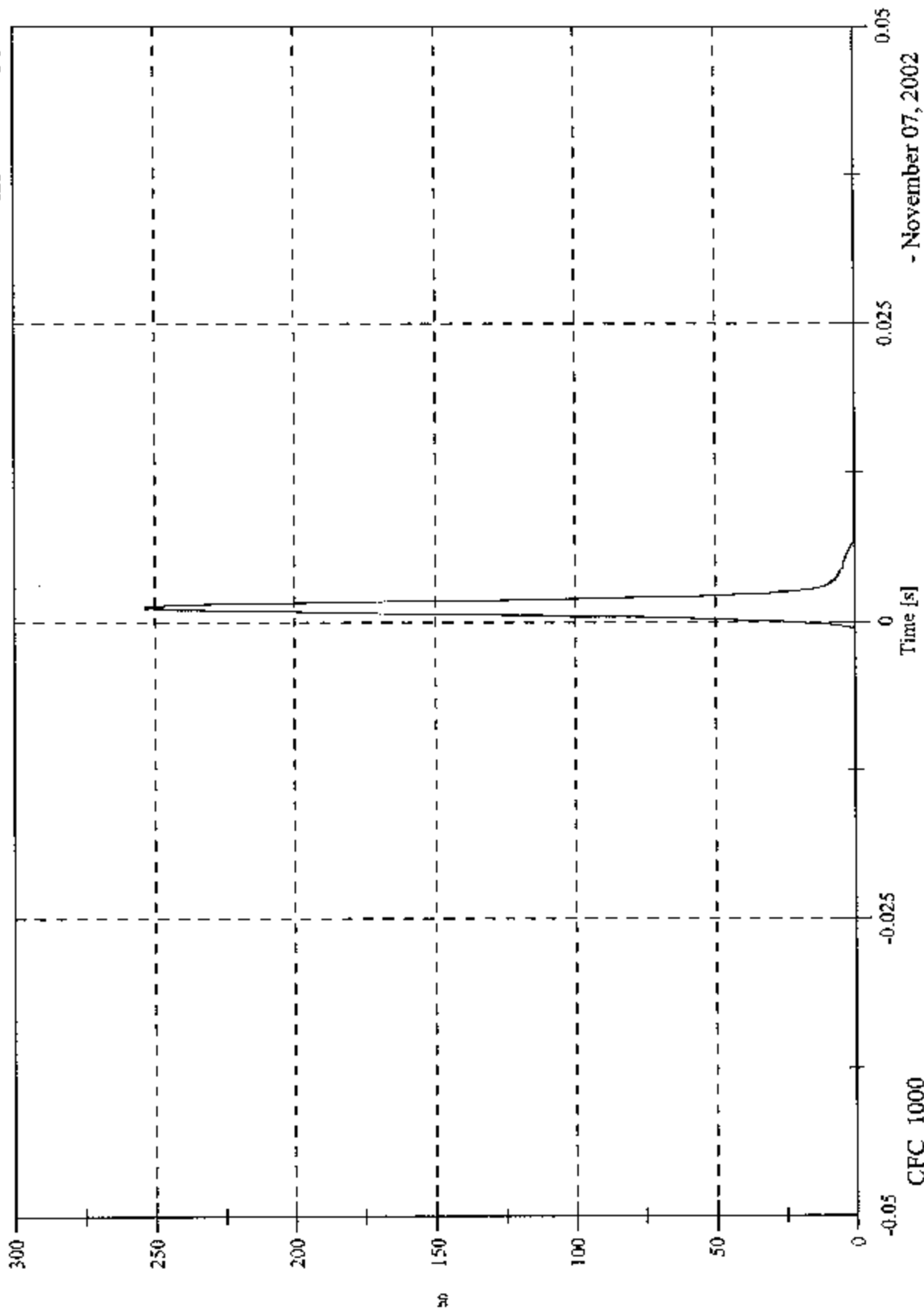
Headform Z Acceleration



FMVSS 201U - Head Form Calibration Drops

Max: 253.9 [g] at 0.001 [s]
Min: 0.0 [g] at -0.034 [s]

Headform Resultant



- November 07, 2002

**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:	FIRST TECHNOLOGIES SAFETY SYSTEMS	
SERIAL NUMBER:	0642	
CALIBRATION DATE:	NOVEMBER 22, 2002	
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	20
RELATIVE HUMIDITY	10% to 70%	32
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	232.0
PEAK LATERAL ACCELERATION	15 Gs Maximum	6.9
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

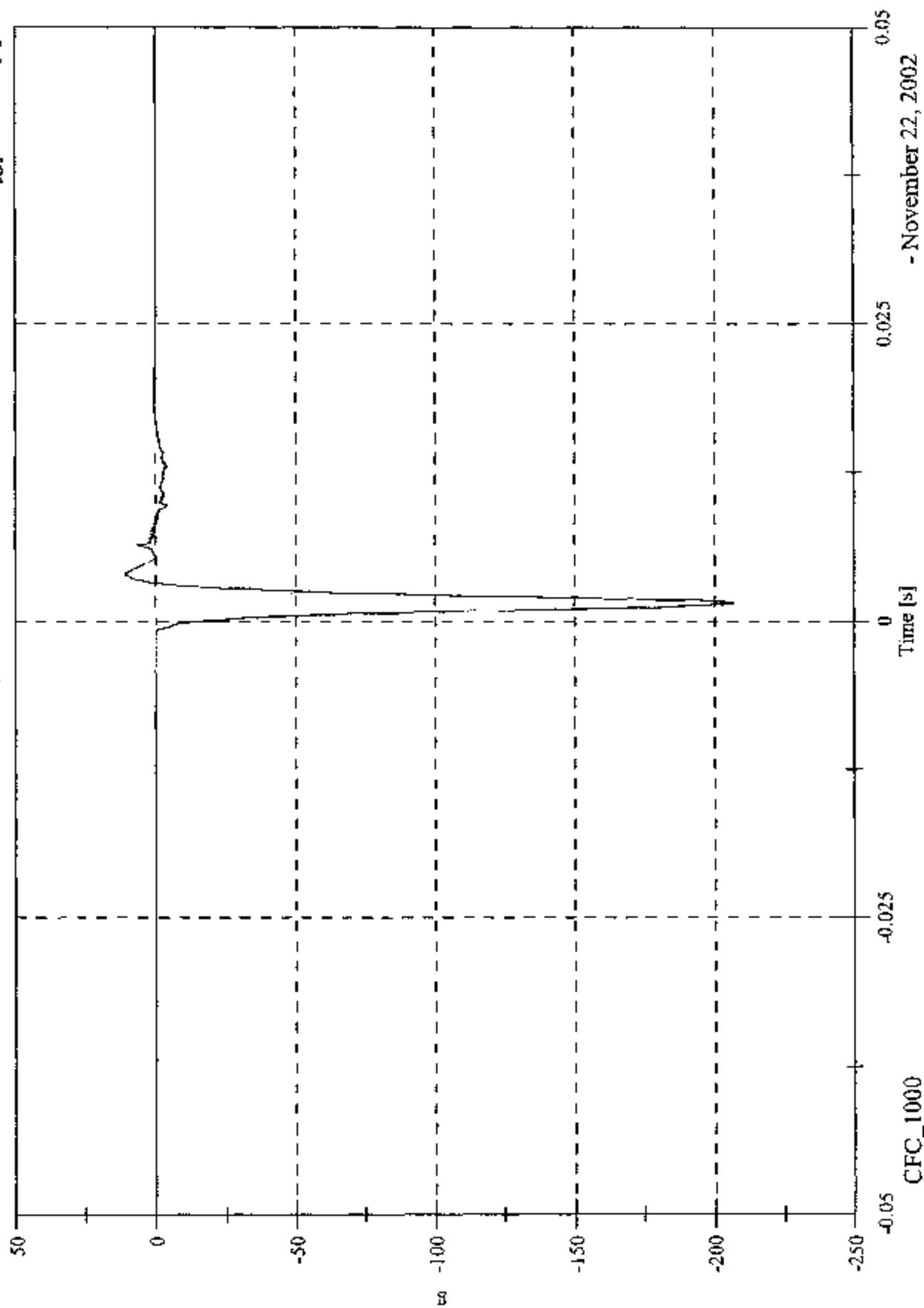
LD. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J24876	9/02	3/03
2 - LATERAL	ENDEVCO	7264-2000T	J33030	9/02	3/03
3 - VERTICAL	ENDEVCO	7264-2000T	J31099	9/02	3/03

REMARKS:

FM/VSS 201U - Head Form Calibration Drops

Max: 10.6 [g] at 0.004 [s]
Min: -206.9 [g] at 0.002 [s]

Headform X Acceleration



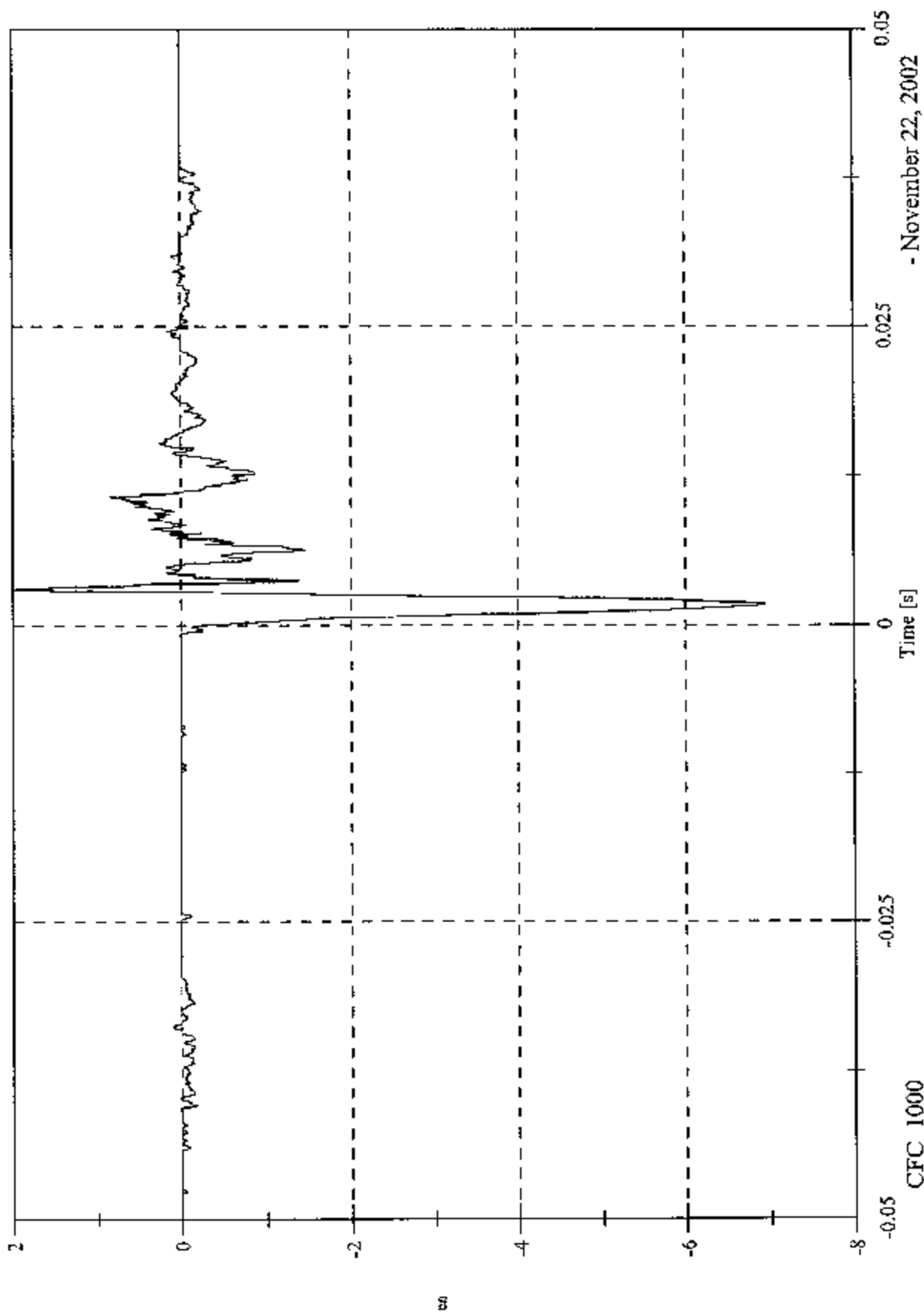
- November 22, 2002

FMVSS 201U - Head Form Calibration Drops

Headform Y Acceleration

Max: 2.0 [g] at 0.003 [s]

Min: -6.9 [g] at 0.002 [s]

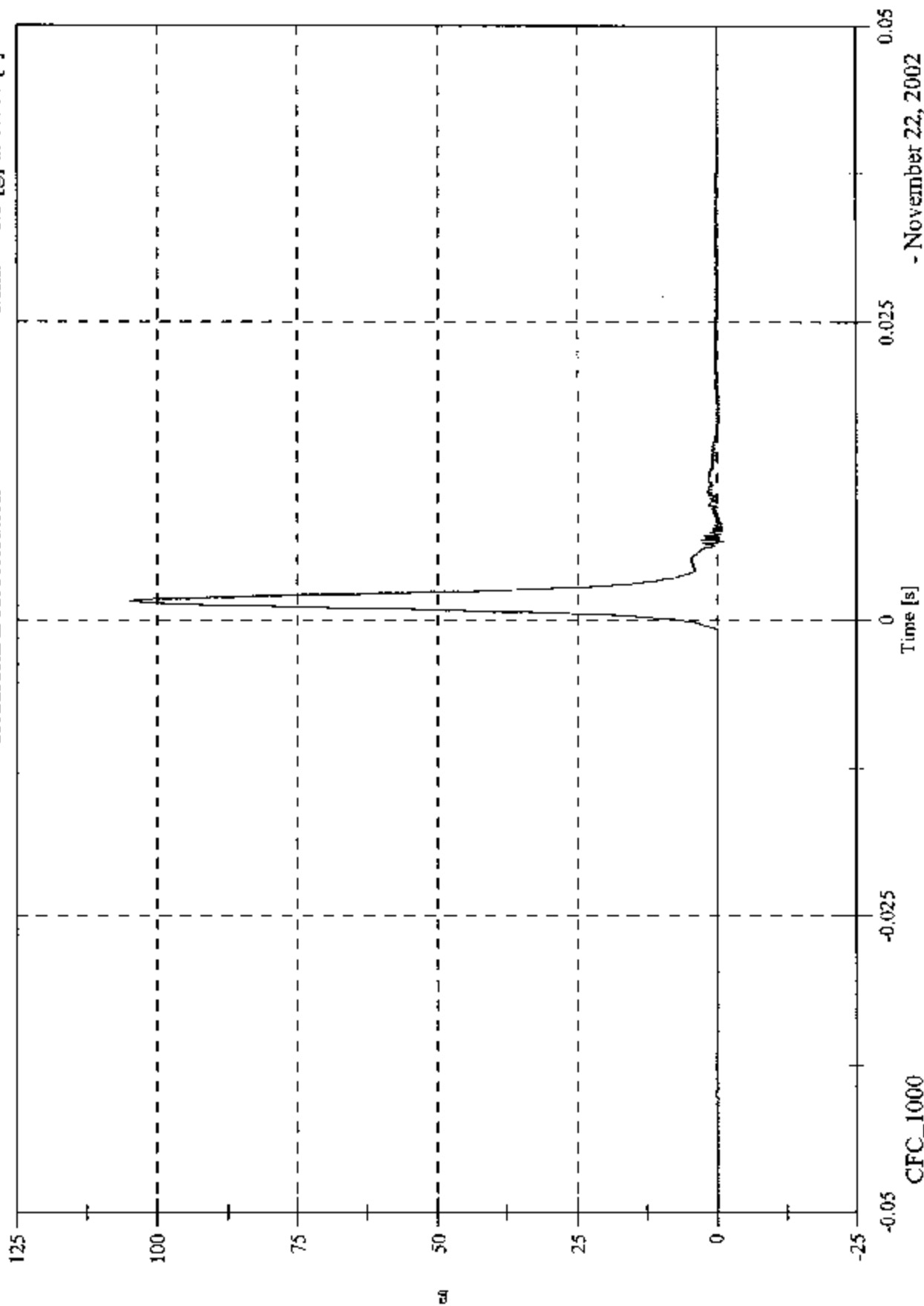


- November 22, 2002

FMVSS 201U - Head Form Calibration Drops

Headform Z Acceleration

Max: 104.8 [g] at 0.002 [s]
Min: -1.3 [g] at 0.007 [s]

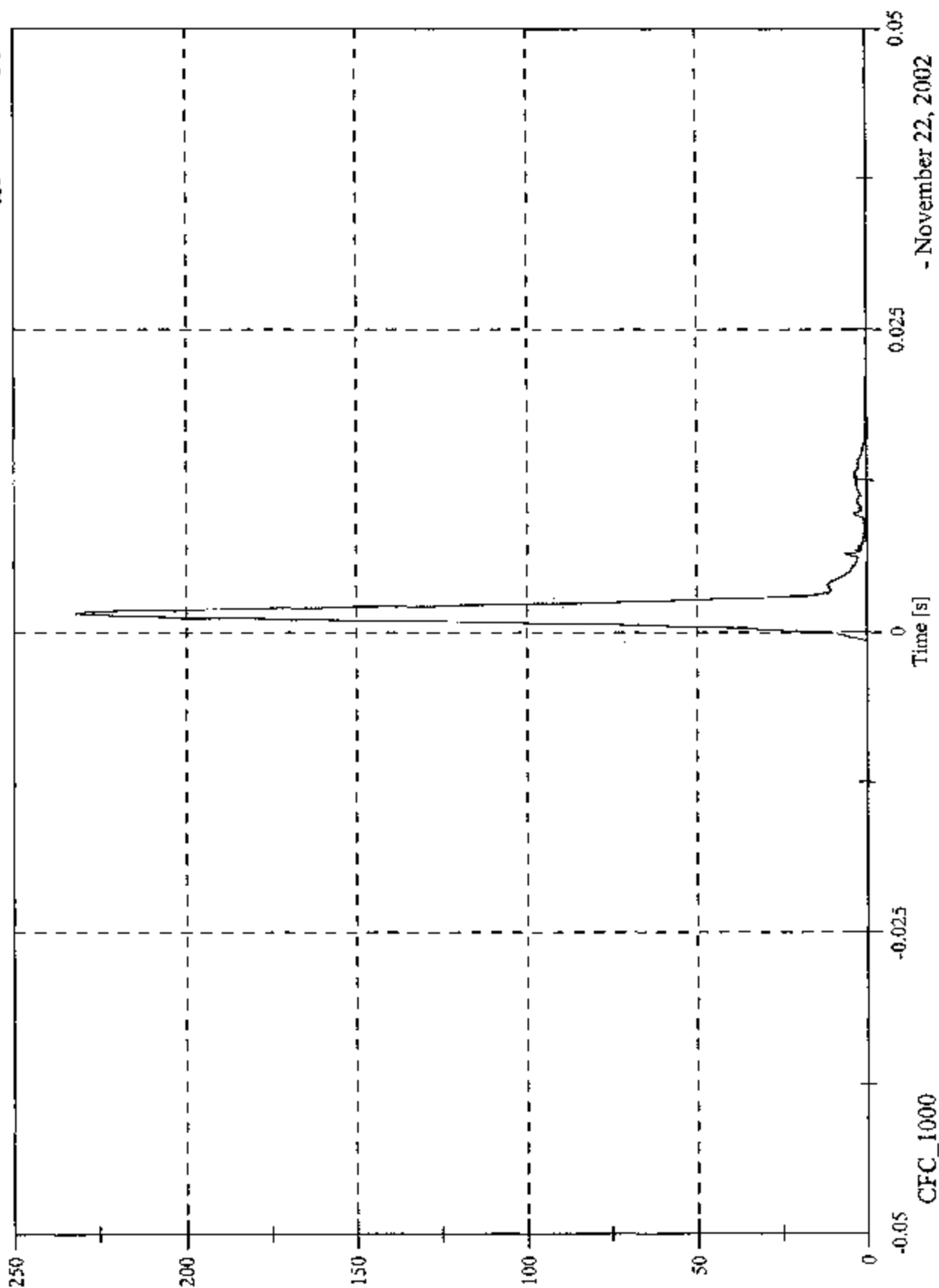


- November 22, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 232.0 [g] at 0.002 [s]
Min: 0.0 [g] at -0.030 [s]

Headform Resultant



**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:	FIRST TECHNOLOGIES SAFETY SYSTEMS	
SERIAL NUMBER:	805	
CALIBRATION DATE:	NOVEMBER 22, 2002	
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	20
RELATIVE HUMIDITY	10% to 70%	32
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	255.4
PEAK LATERAL ACCELERATION	15 Gs Maximum	9.5
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

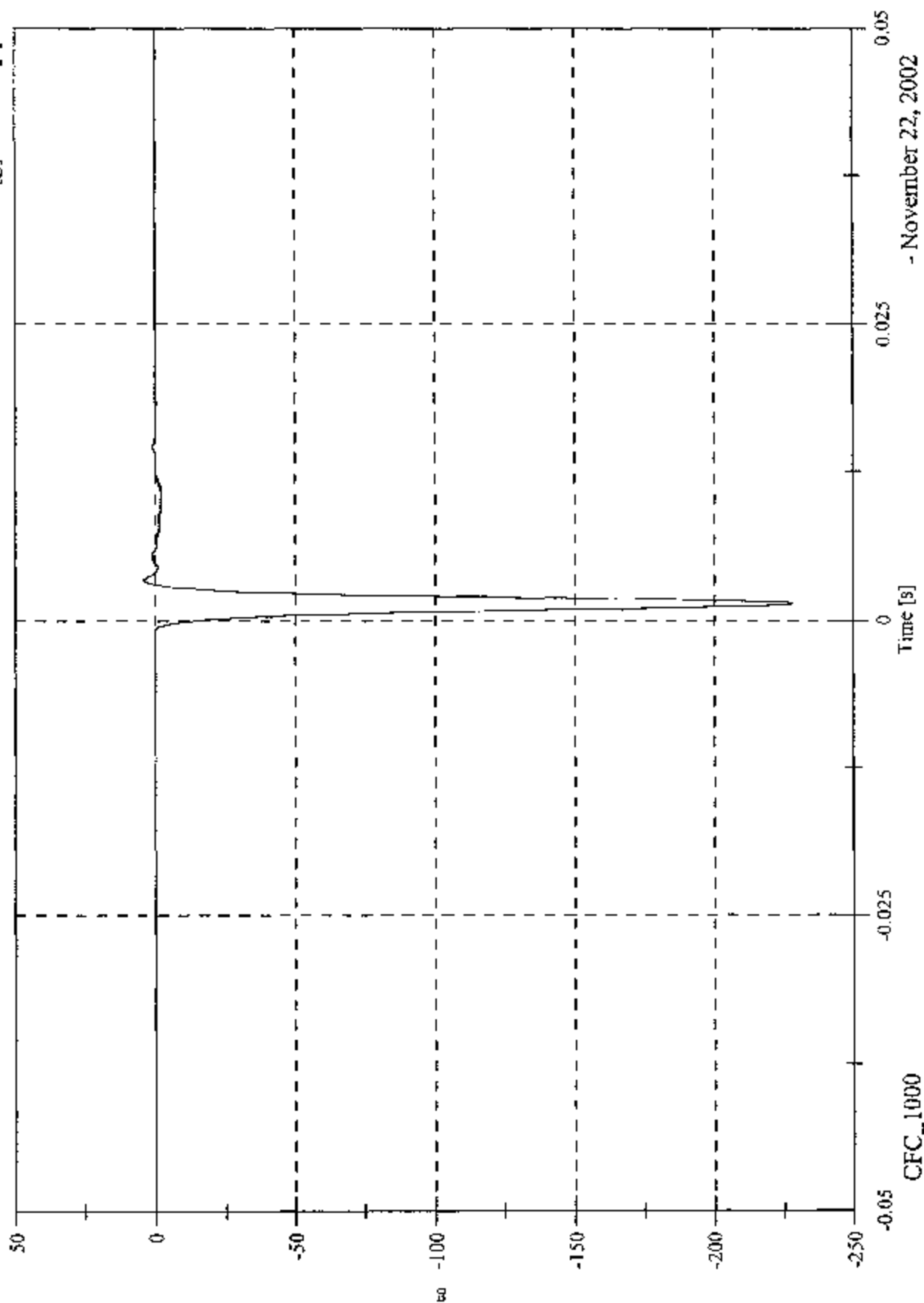
ID. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J38127	9/02	3/03
2 - LATERAL	ENDEVCO	7264-2000T	J37980	9/02	3/03
3 - VERTICAL	ENDEVCO	7264-2000T	J37854	9/02	3/03

REMARKS:

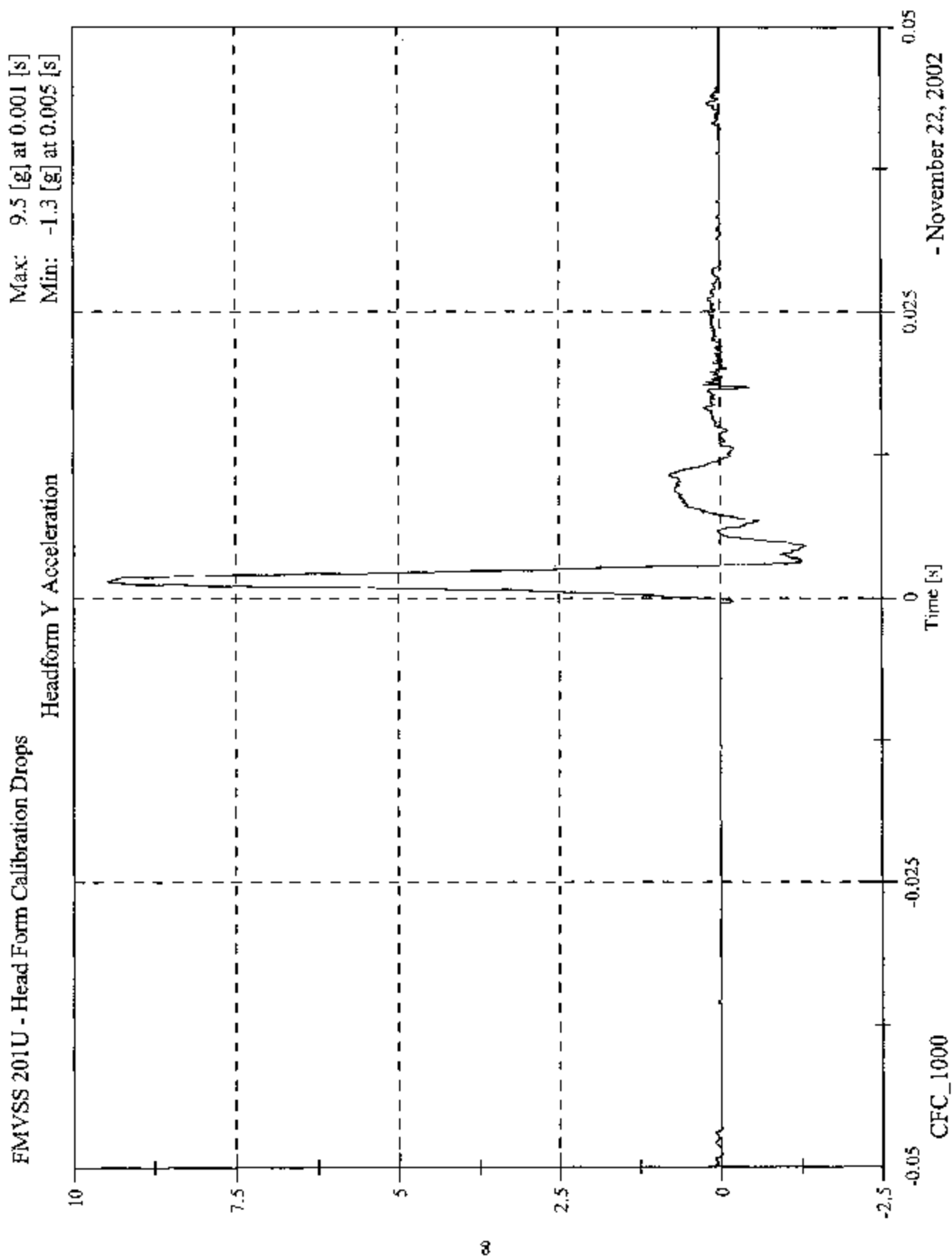
FMVSS 201C - Head Form Calibration Drops

Max: 4.1 [g] at 0.003 [s]
Min: -228.0 [g] at 0.001 [s]

Headform X Acceleration



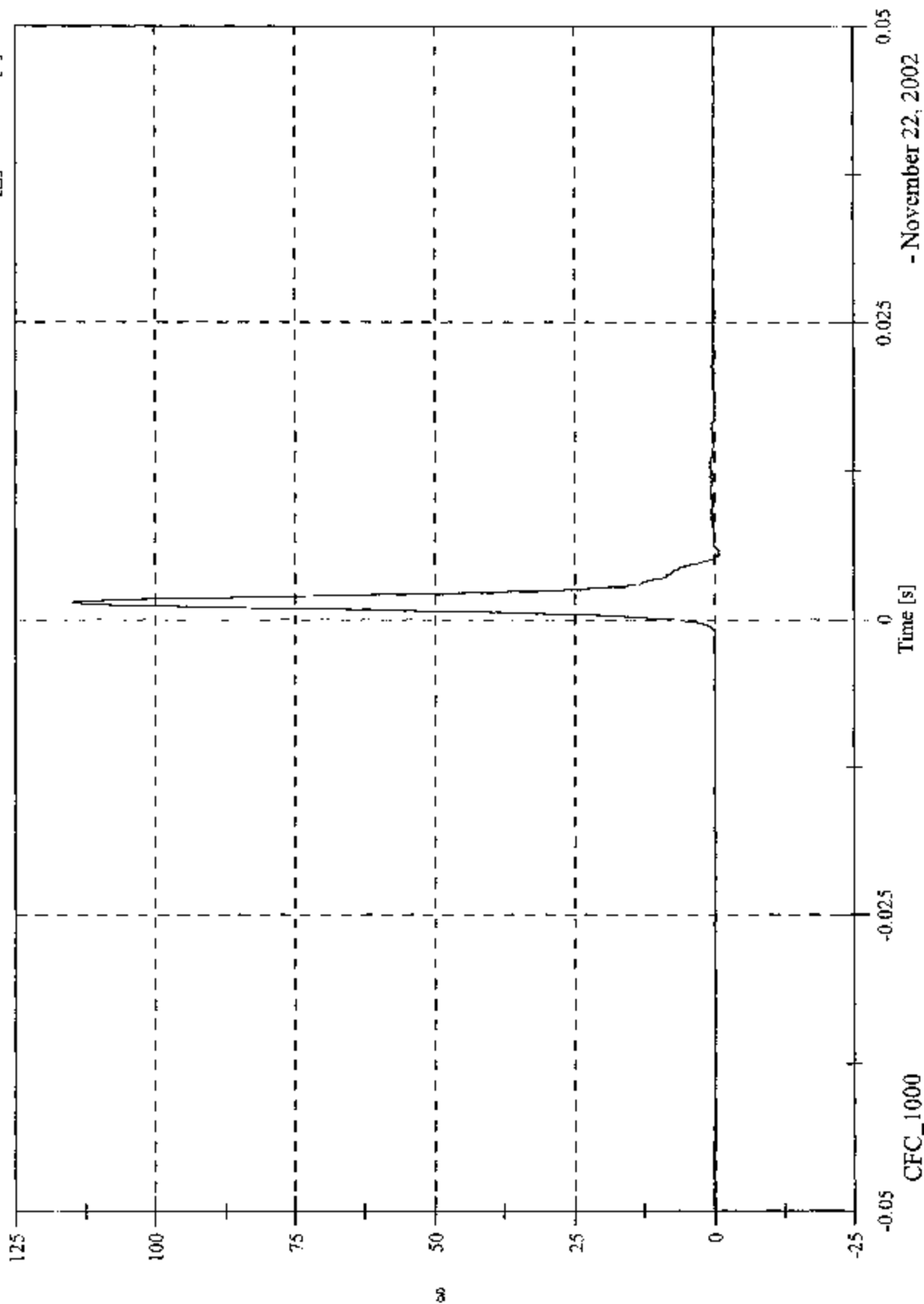
- November 22, 2002



FMVSS 201U - Head Form Calibration Drops

Max: 114.8 [g] at 0.001 [s]
Min: -0.9 [g] at 0.005 [s]

Headform Z Acceleration



CFC_1000

Time [s]

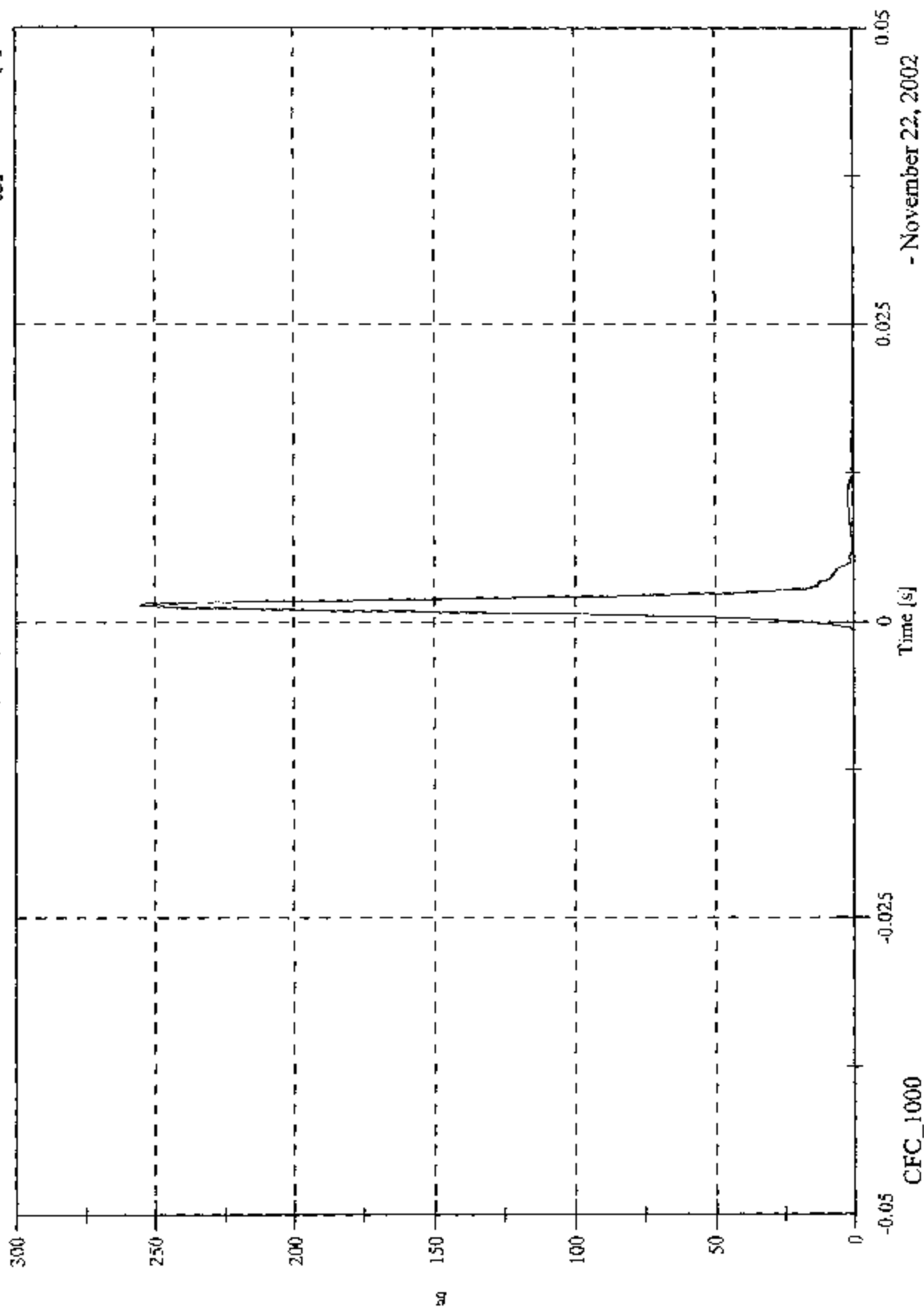
- November 22, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 255.4 [g] at 0.001 [s]

Min: 0.0 [g] at -0.014 [s]

Headform Resultant



- November 22, 2002

**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:	APPLIED SAFETY TECHNOLOGIES CORPORATION	
SERIAL NUMBER:	0062	
CALIBRATION DATE:	NOVEMBER 22, 2002	
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	20
RELATIVE HUMIDITY	10% to 70%	32
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	244.4
PEAK LATERAL ACCELERATION	15 Gs Maximum	5.3
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

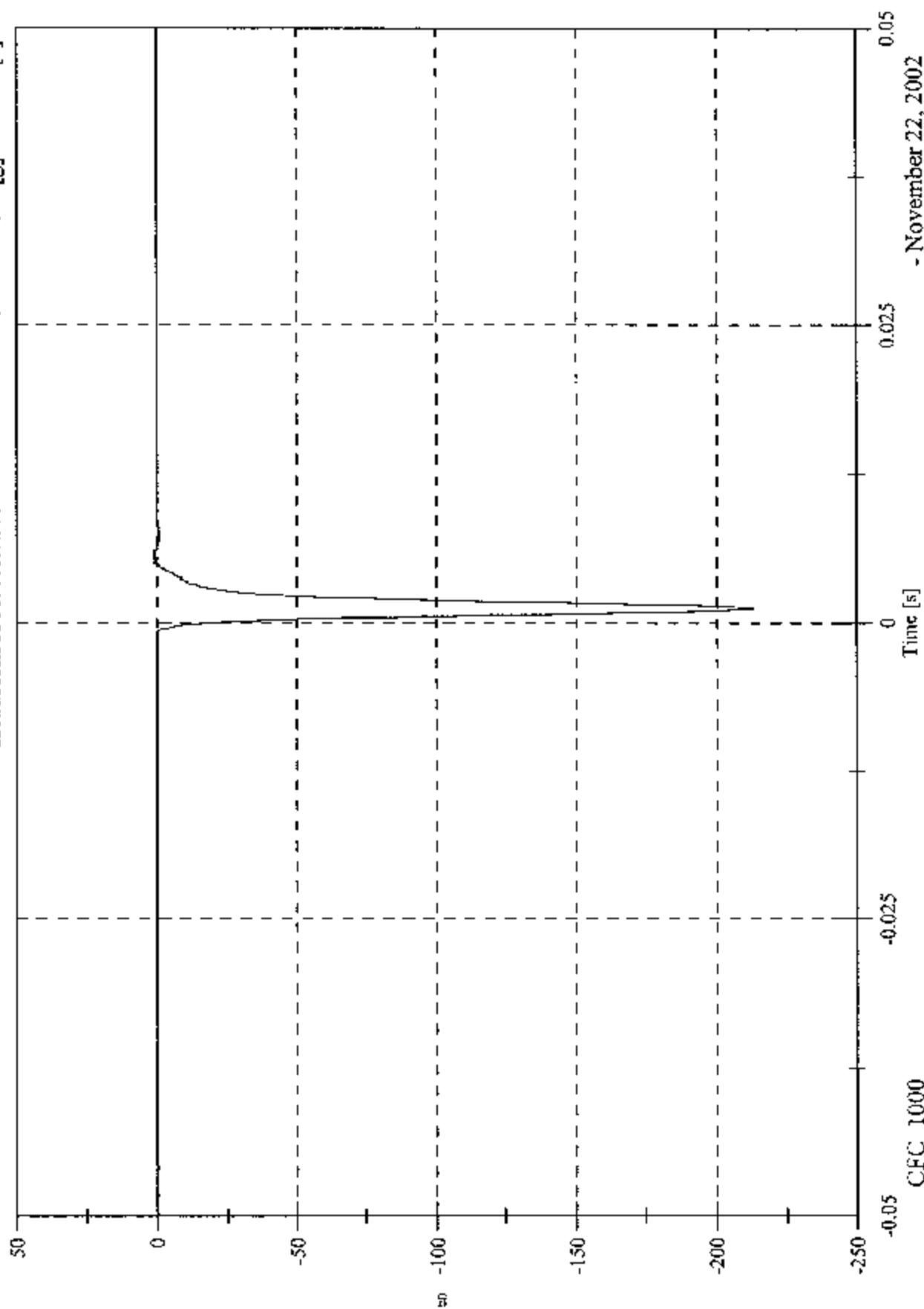
ID. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J33127	9/02	3/03
2 - LATERAL	ENDEVCO	7264-2000T	J33019	9/02	3/03
3 - VERTICAL	ENDEVCO	7264-2000T	J32782	9/02	3/03

REMARKS:

FMVSS 201U - Head Form Calibration Drops

Max: 1.3 [g] at 0.006 [s]
Min: -213.2 [g] at 0.001 [s]

Headform X Acceleration

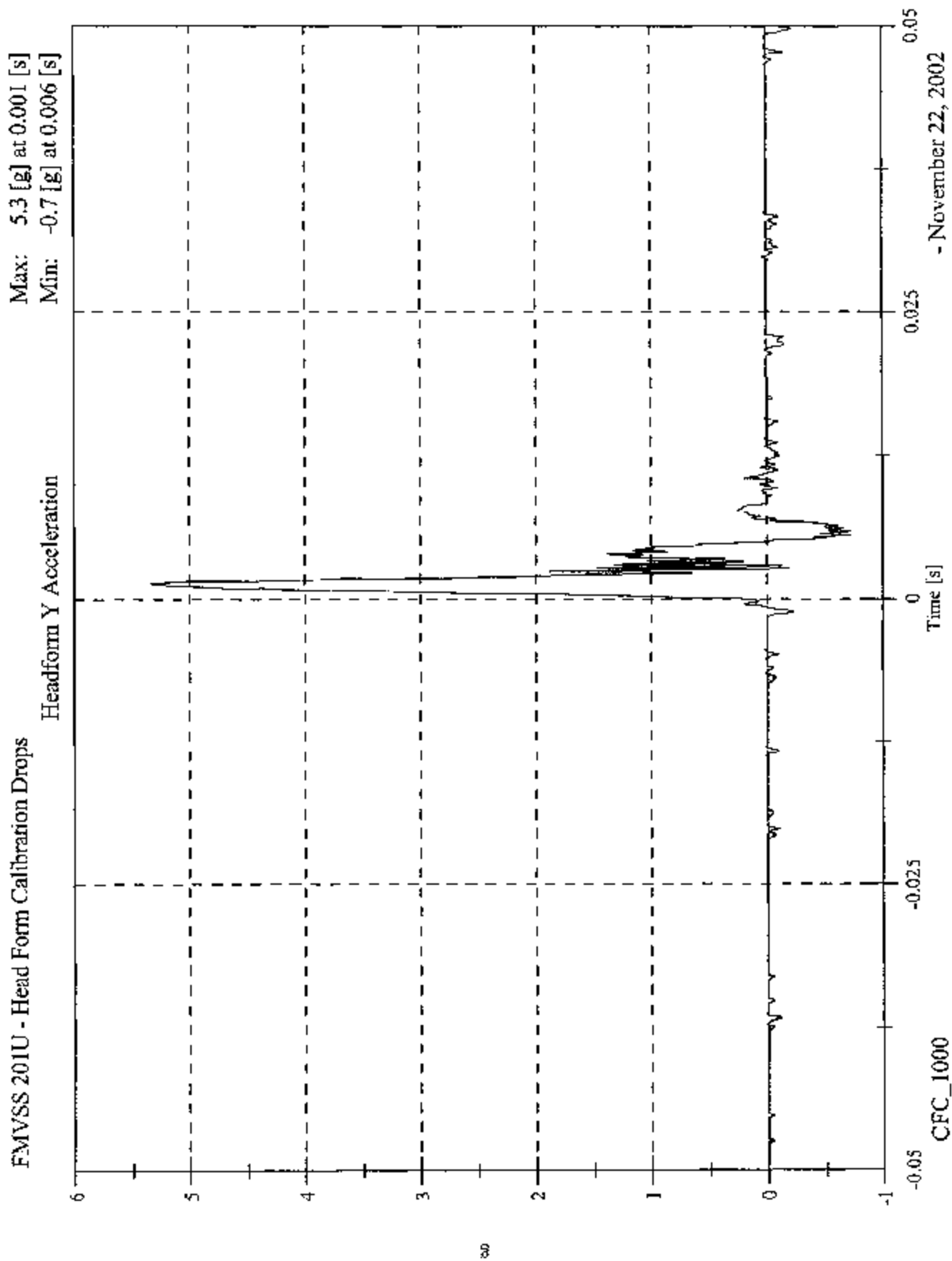


CFC_1000

Time [s]

- November 22, 2002

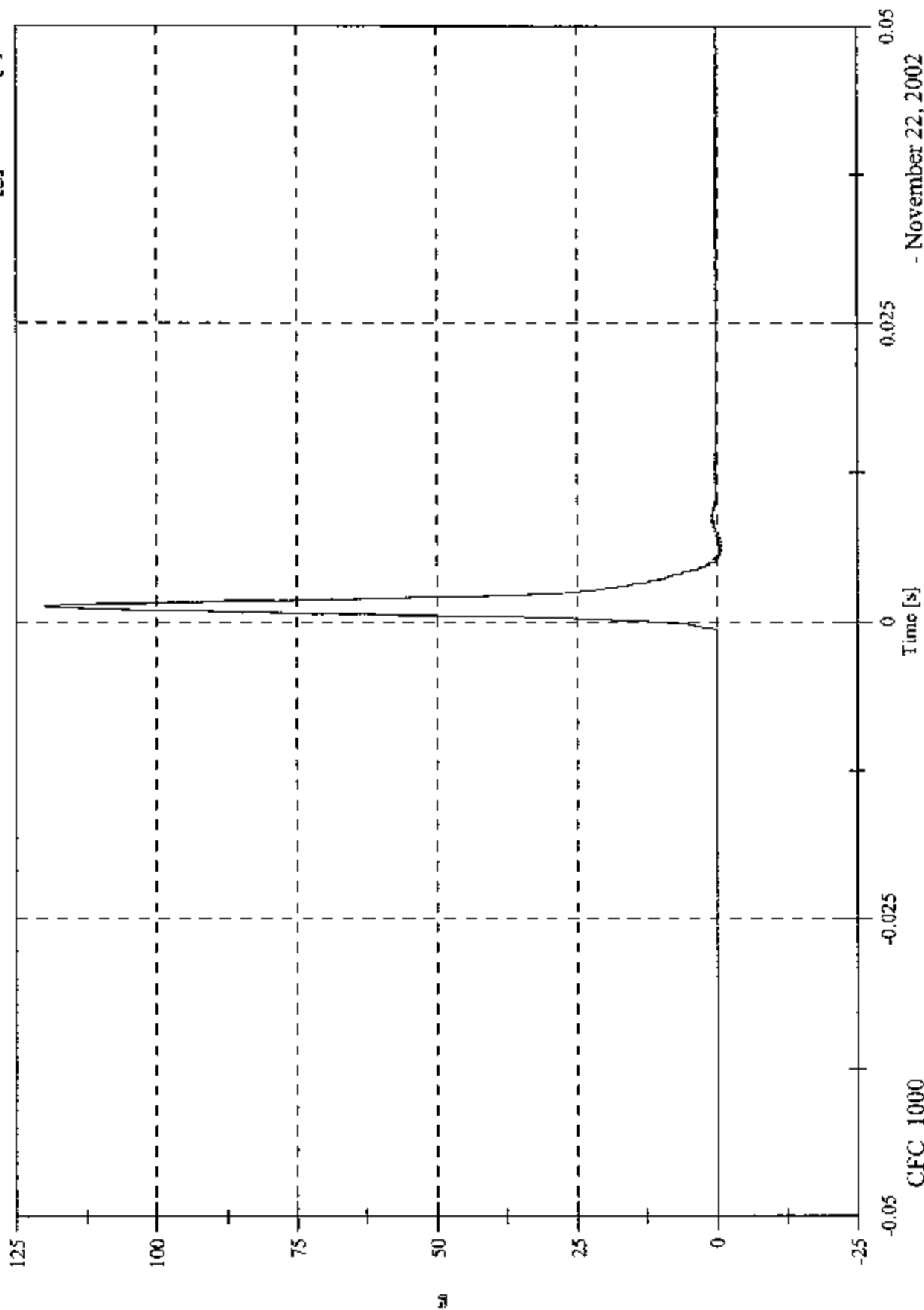
POST-TEST C35101 HEADFORM 0062 IMPACT PLOT #2



FMVSS 201U - Head Form Calibration Drops

Max: 119.9 [g] at 0.001 [s]
Min: -0.9 [g] at 0.006 [s]

Headform Z Acceleration

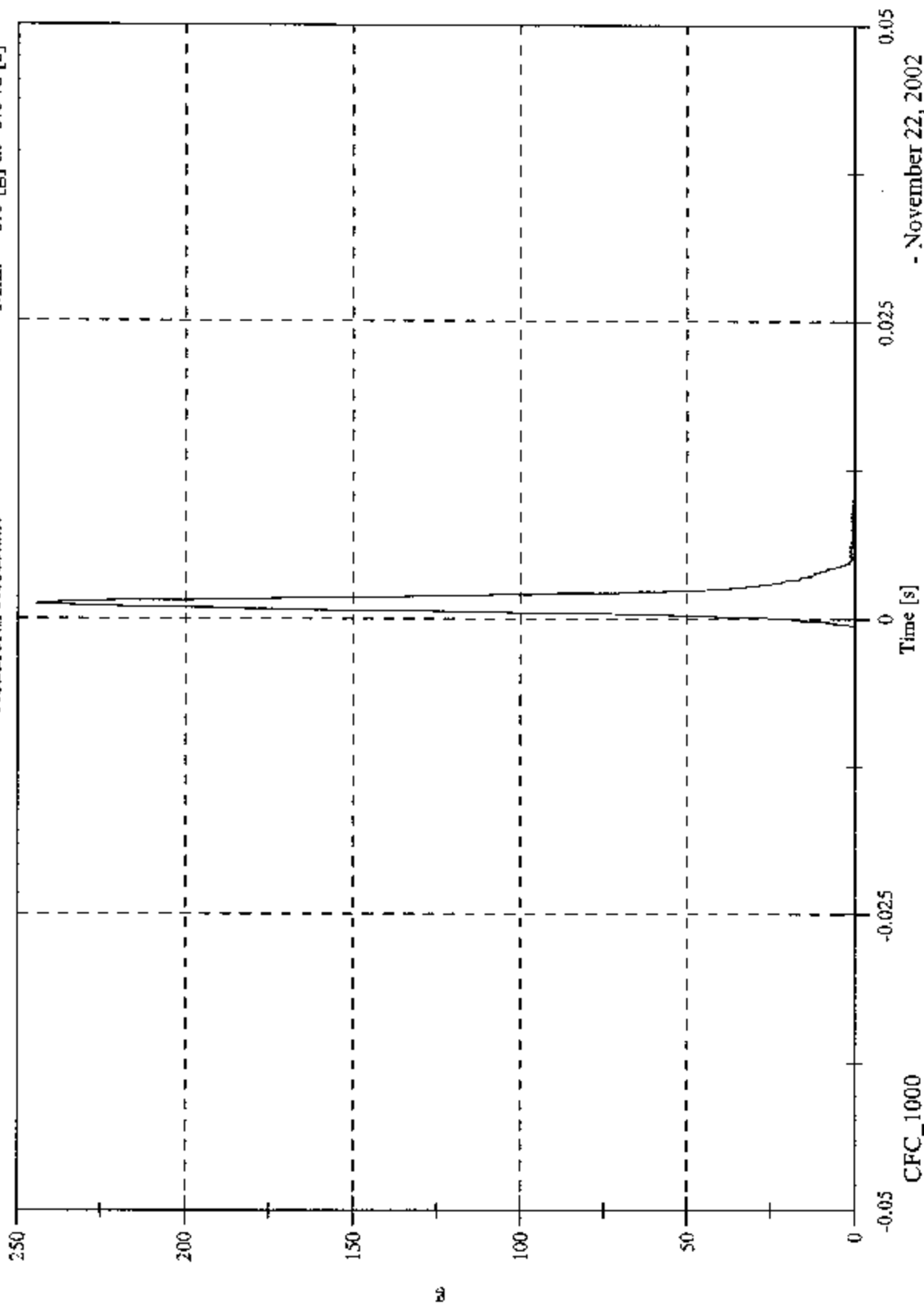


- November 22, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 244.4 [g] at 0.001 [s]
 Min: 0.0 [g] at -0.048 [s]

Headform Resultant



CFC_1000

- November 22, 2002

**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:	APPLIED SAFETY TECHNOLOGIES CORPORATION	
SERIAL NUMBER:	0355	
CALIBRATION DATE:	NOVEMBER 22, 2002	
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	20
RELATIVE HUMIDITY	10% to 70%	32
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	258.0
PEAK LATERAL ACCELERATION	15 Gs Maximum	4.0
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J28671	9/02	3/03
2 - LATERAL	ENDEVCO	7264-2000T	J32779	9/02	3/03
3 - VERTICAL	ENDEVCO	7264-2000T	J25854	9/02	3/03

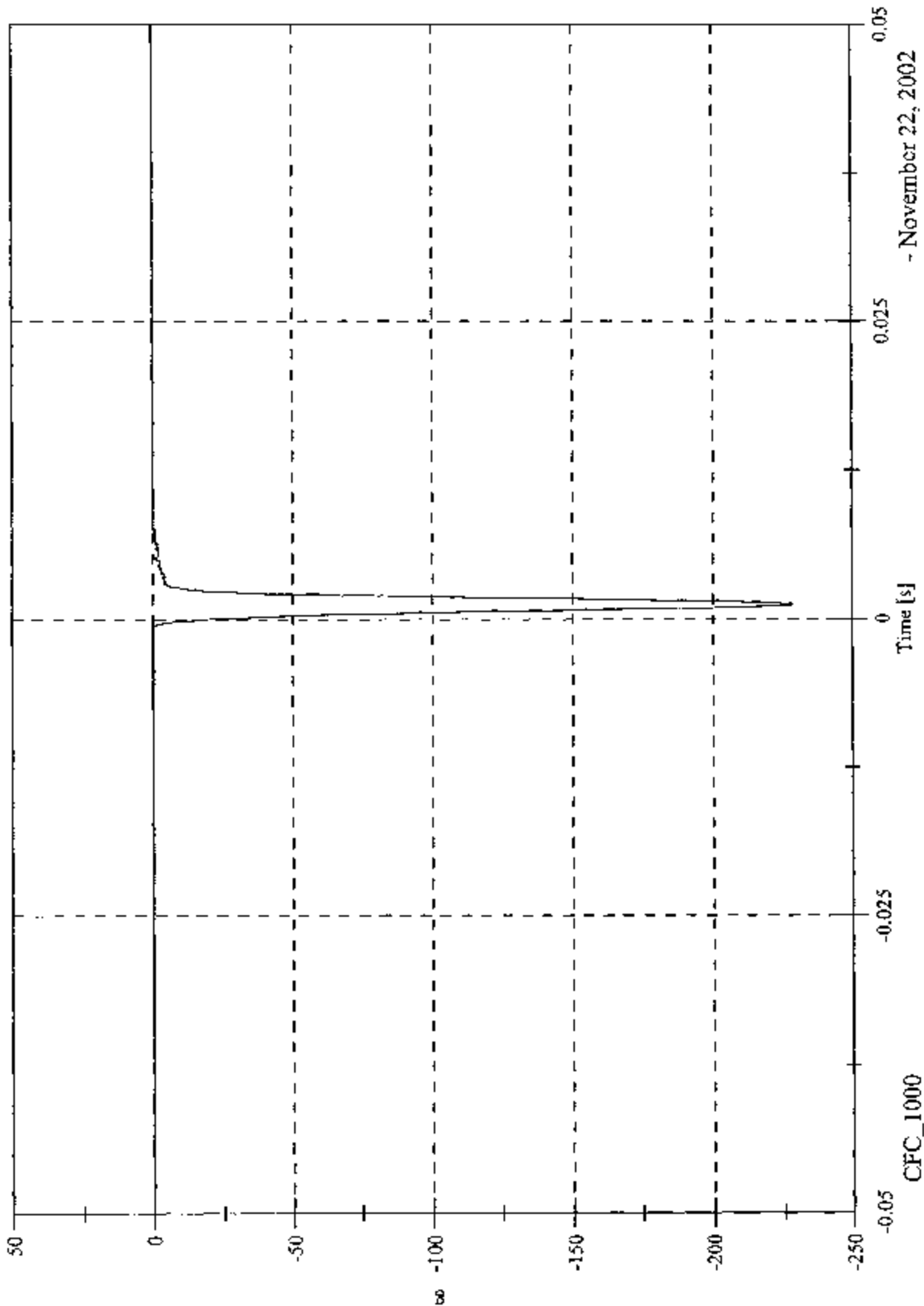
REMARKS:

FMVSS 201U - Head Form Calibration Drops

Headform X Acceleration

Max: 0.3 [g] at 0.009 [s]

Min: -228.0 [g] at 0.001 [s]

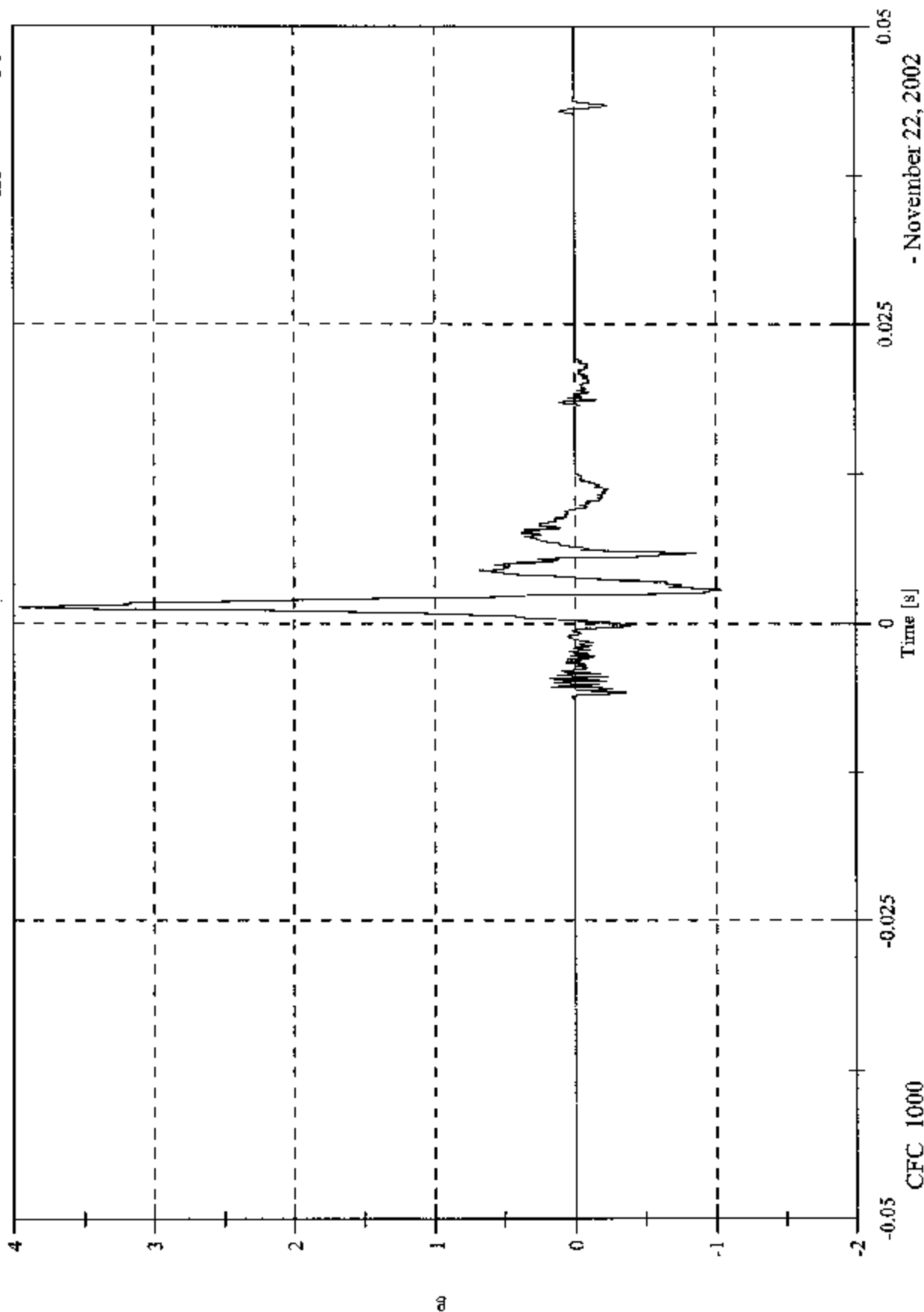


- November 22, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 4.0 [g] at 0.001 [s]
Min: -1.0 [g] at 0.003 [s]

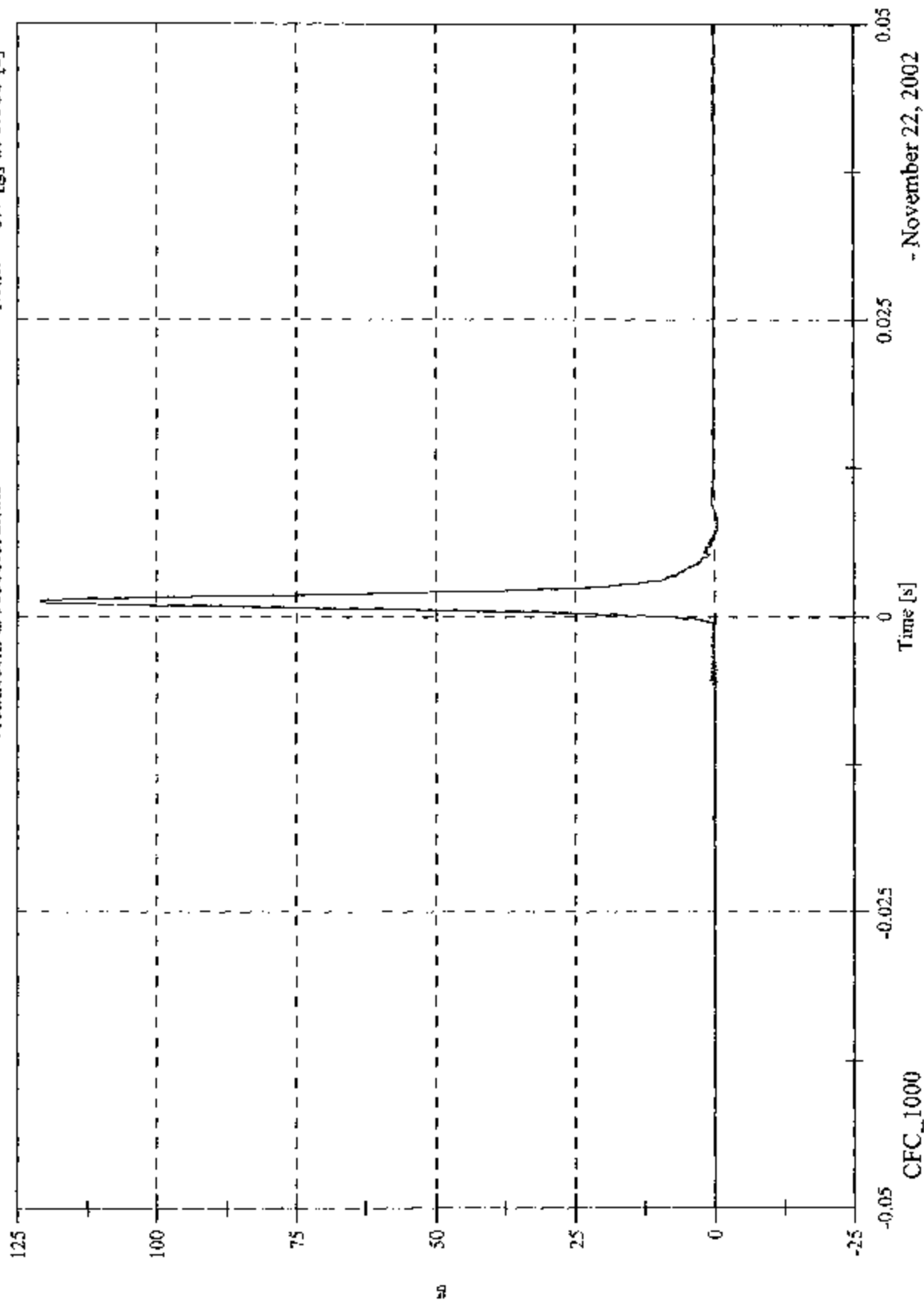
Headform Y Acceleration



FMVSS 201U - Head Form Calibration Drops

Max: 120.9 [g] at 0.001 [s]
Min: -0.7 [g] at 0.008 [s]

Headform Z Acceleration



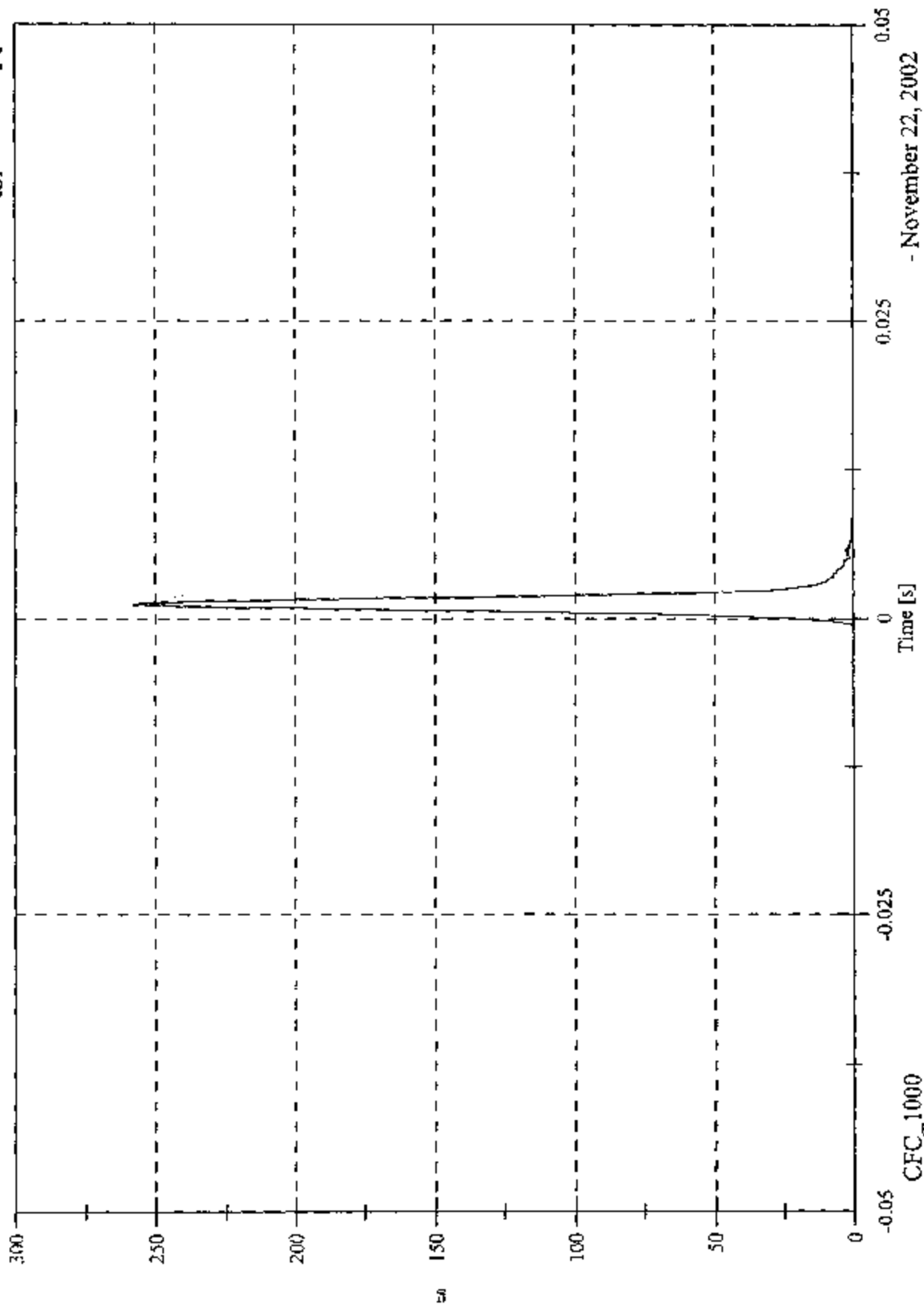
- November 22, 2002

FMVSS 201U - Head Form Calibration Drops

Max: 258.0 [g] at 0.001 [s]

Min: 0.0 [g] at -0.034 [s]

Headform Resultant



- November 22, 2002